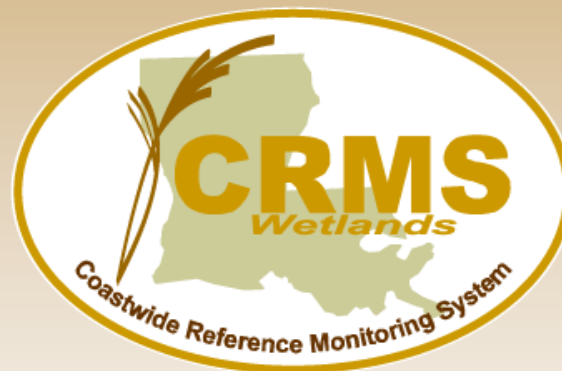




# CRMS Website Roadshow



**February and March 2013**



# Data/Visualization

- **Released to Production**

- Bulk Data Download
- New Charting Interface
- Bulk Charting Tool
- Reporting

- **Staged**

- Multi-Site Plot Hydro index chart
- Map based Station picker for multi station lists in charting and bulk data tool.



[Home](#) [Data](#) [Mapping](#) [Library](#) [Visualization](#) [Program](#)

**PROVISIONAL DATA SUBJECT TO REVISION**

Station:

CRMS0061

(ex. CRMS0002)

Chart Type:

Hydrographic

▼

Station Number:

H01

▼

FROM: Sep 19 2007 12:00AM TO: Sep 5 2011 12:00AM

Parameters:

☒ Salinity

☒ Water Temp

☒ Water Level

---

Start Date:

08/06/2011

(mm/dd/yyyy)

Duration:

30

days

▼

---

Create Graph

## Remember me?



## Data/Visualization

Coastwide Reference Monitoring System


Home Data Mapping Library Visualization Program

[Previous Charting Version](#)

Charting Bulk Charting Data Download Reporting

- ▶ Hydro
- ▶ Vegetation
- ▶ Soil
- ▶ Spatial
- ▶ Report Card Charts

Clear Charts



### Charting:

- Individual charts
- Site, multi-station, project

### Bulk Charting:

- Generate & download sets of charts (with custom colors where appropriate)

### Data Download:

- Download derived values

### Reporting:

- CRMS report cards (multi-scale)
- OM&M reports coming soon

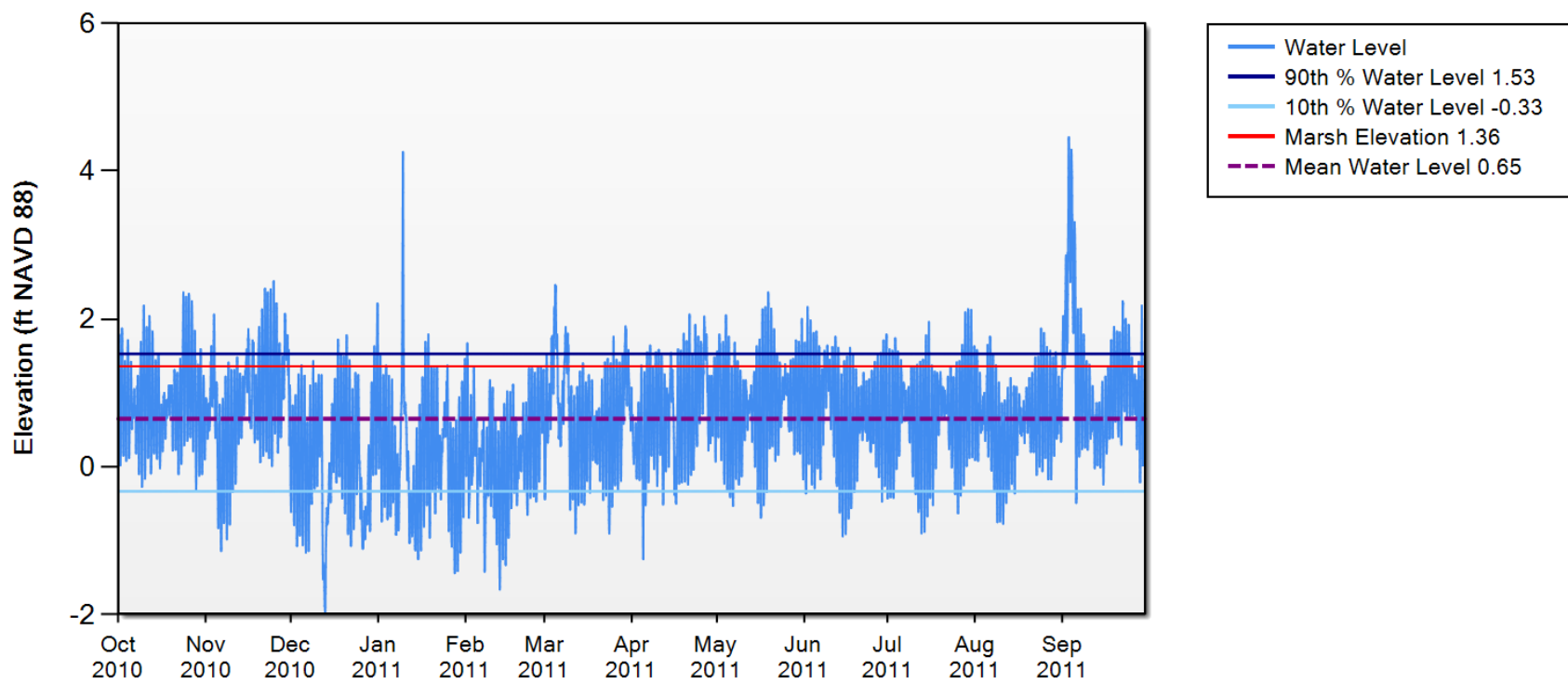


# New Charts



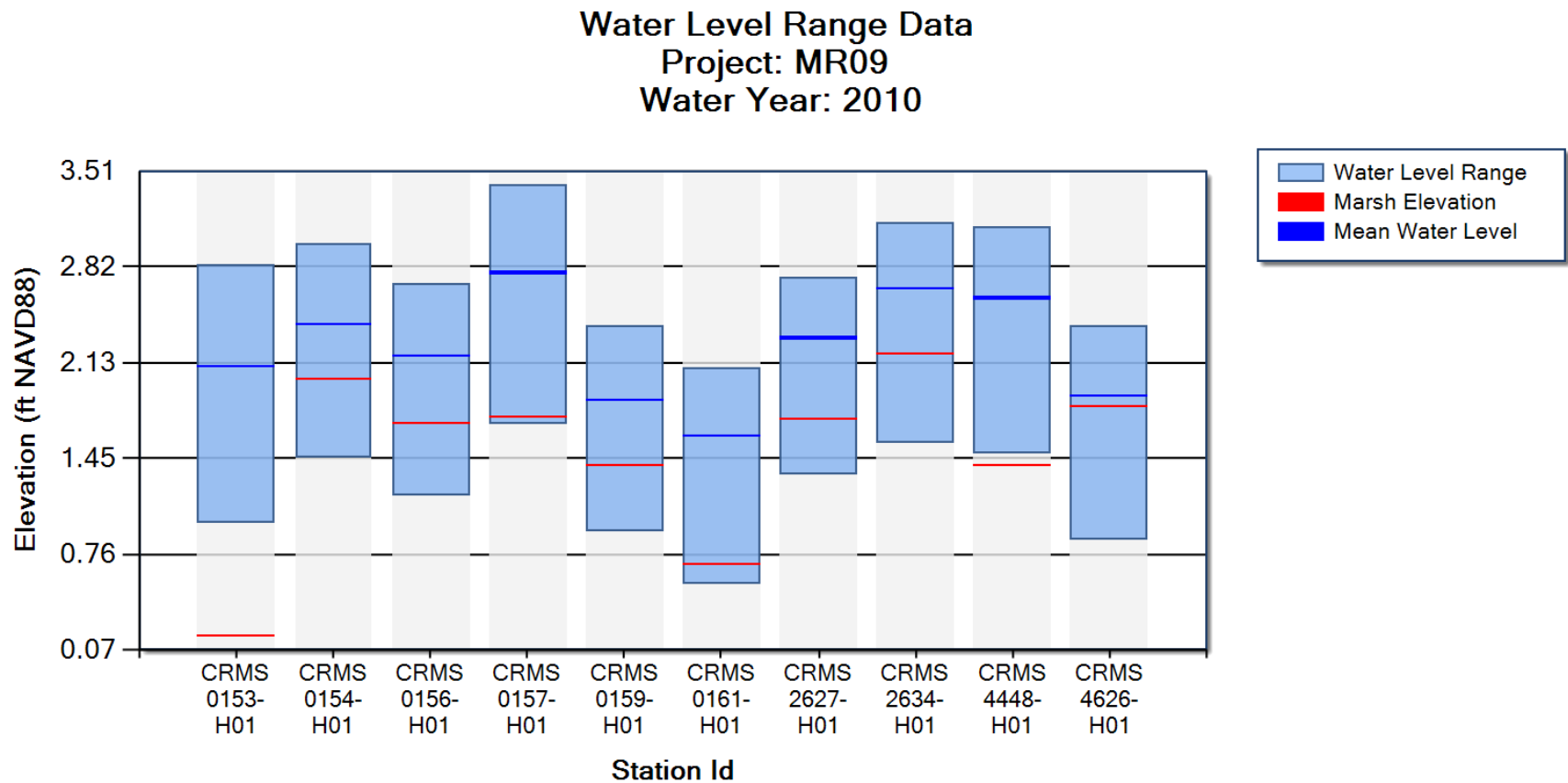
## Station Water Level Range

Water Level Range - CRMS0003-H01 2011

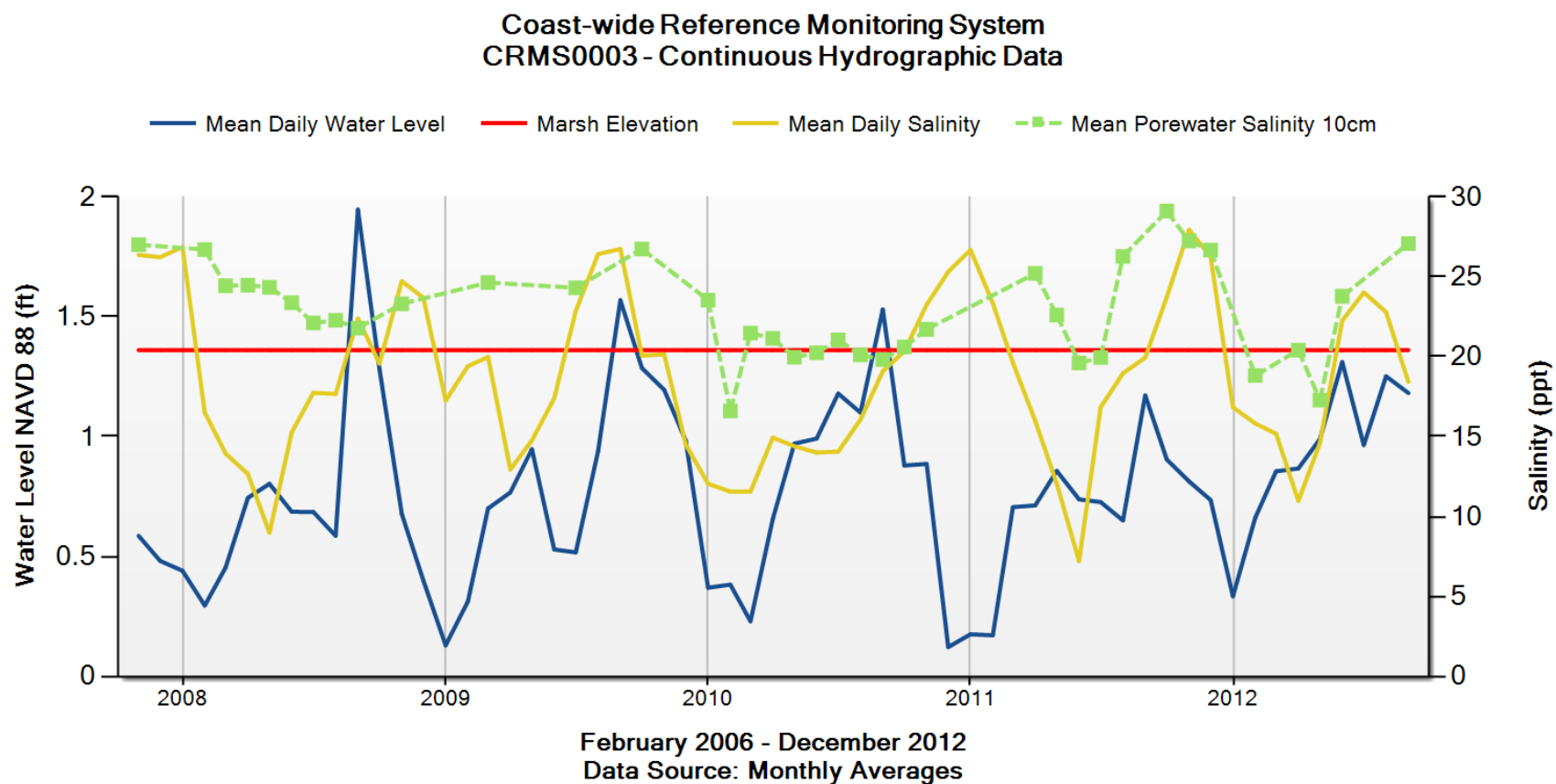


Data Source: Continuous Hourly Observations

## Project Water Level Range



## Continuous Hydro







# Charting-Hydro: Multi-Station Example

limited to 10 stations

[Previous Charting Version](#)

Charting

Bulk Charting

Data Download

Reporting

## ▼ Hydro

Water Level Range  
Hydro Completeness  
Salinity  
**Water Level**  
Temperature  
Continuous  
Site Hydro Index  
Soil Porewater  
Precipitation

Interactive Hydro

## ► Vegetation

## ► Soil

## ► Spatial

## ► Report Card Charts

Clear Charts

Water Year is October 1 - September 30

Scale: Multi Station ▼

Date Range:

2/25/1987 - 12/19/2012

Min Date: 2/25/1987

Max Date: 12/19/2012

Apply Date Filter

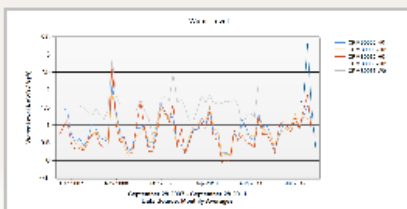
Basin: All Basins ▼

Project: All Projects ▼

Selection limited to 10 items.

AT04-01	CRMS0002-H01
AT04-02	CRMS0003-H01
AT04-03	CRMS0035-H01
AT04-04	CRMS0065-H01
AT04-06	CRMS0065-W01
BA01-01	
BA01-02	
BA01-03	
BA01-04	

Submit Request

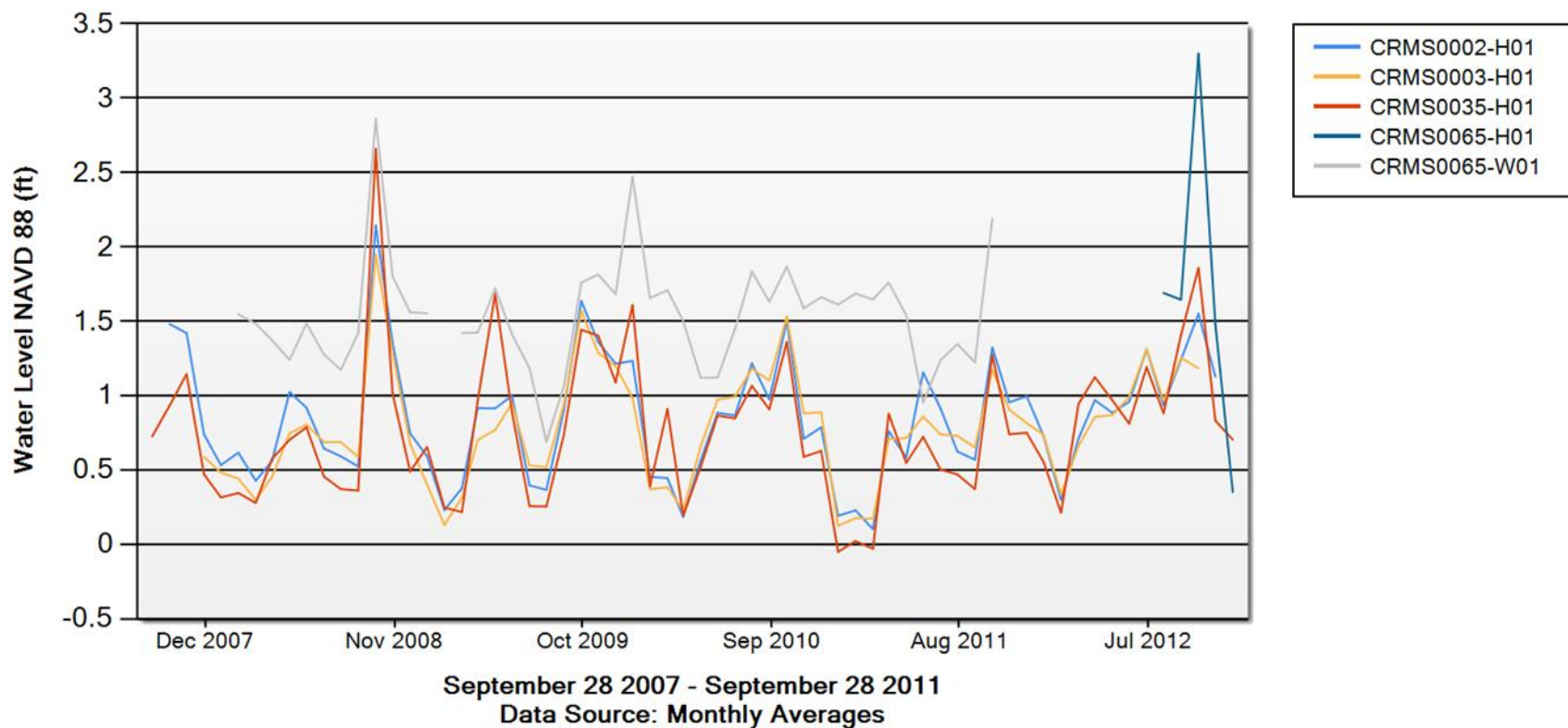




# Charting-Hydro: Multi-Station Example

limited to 10 stations

Water Level





# Charting-Hydro: Interactive Hydro



Coastwide Reference Monitoring System

a CWWPRA funded project

Home

Data

Mapping

Library

Visualization

Program

CRMS0232-H01 ▾

Water Level ▾

Red ▾

CRMS4529-H01 ▾

Water Level ▾

Blue ▾

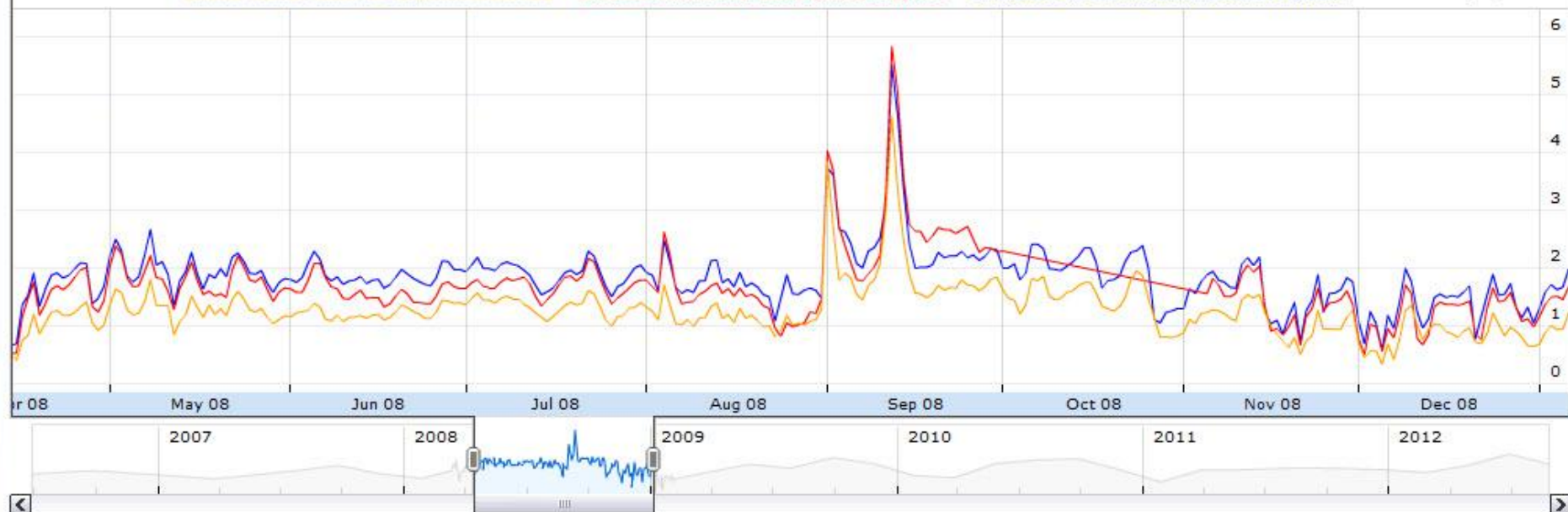
CRMS0172-H01 ▾

Water Level ▾

Orange ▾

Submit

• CRMS0172-H01 Water Level (ft NAVD88) 0.92 • CRMS0232-H01 Water Level (ft NAVD88) 1.26 • CRMS4529-H01 Water Level (ft NAVD88) 1.51 | 00:00 January 07, 2009





# Charting-Hydro: Interactive Hydro

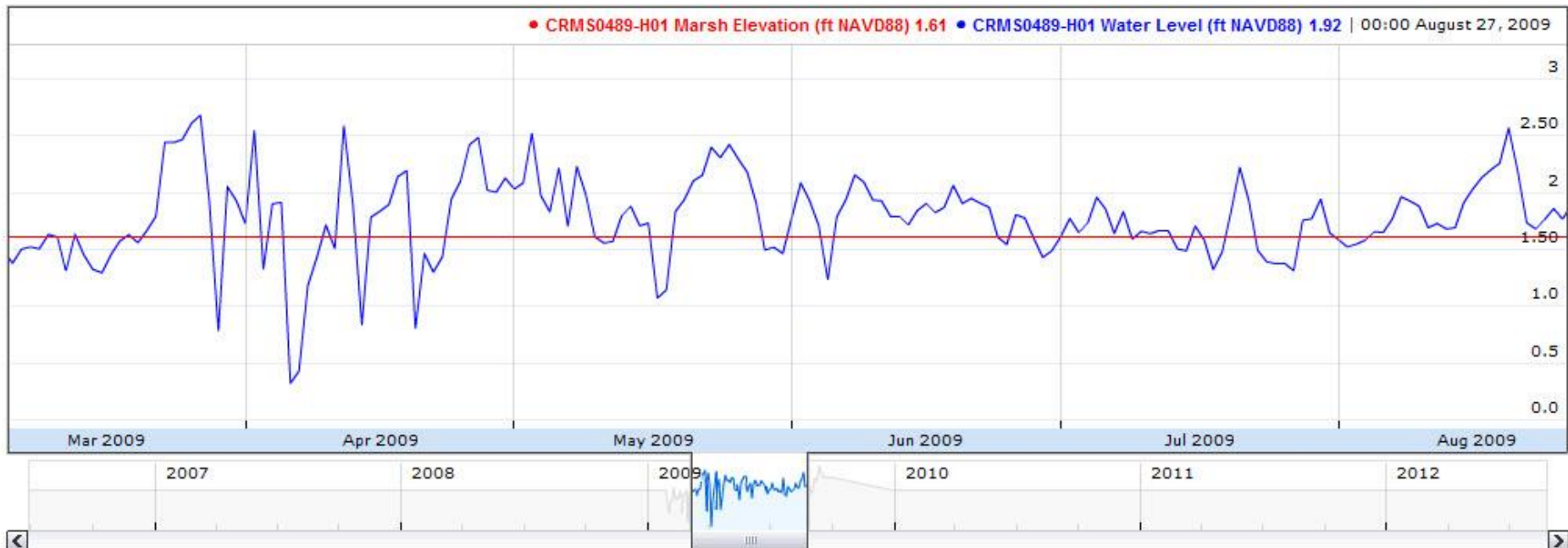


## Coastwide Reference Monitoring System

a CWPPRA funded project

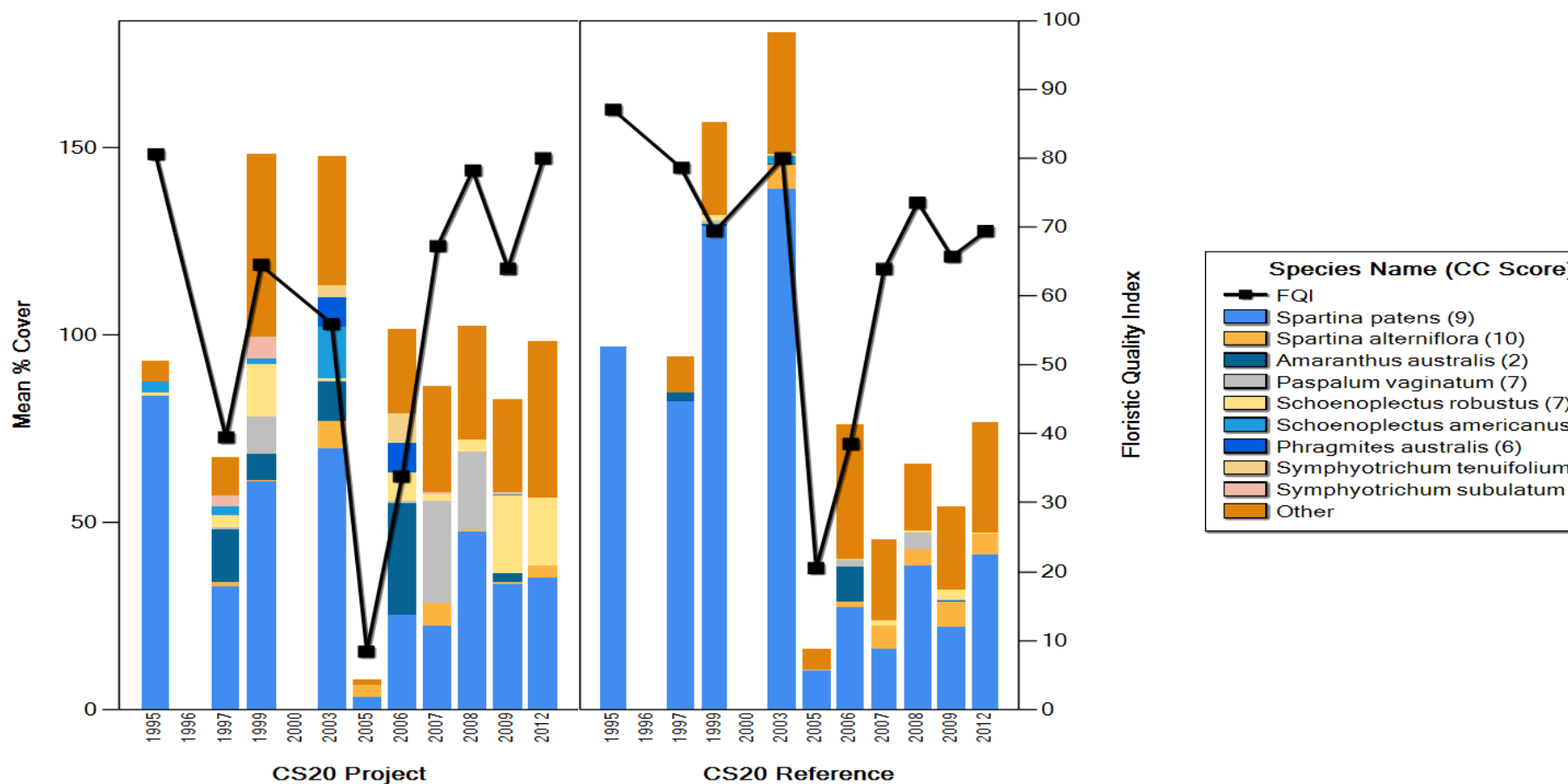
Home Data Mapping Library Visualization Program

CRMS0489-H01 ▾	Water Level ▾	Blue ▾
CRMS0489-H01 ▾	Marsh Elevation ▾	Red ▾
None ▾	Water Temperature ▾	Orange ▾
<input type="button" value="Submit"/>		



## Project FQI

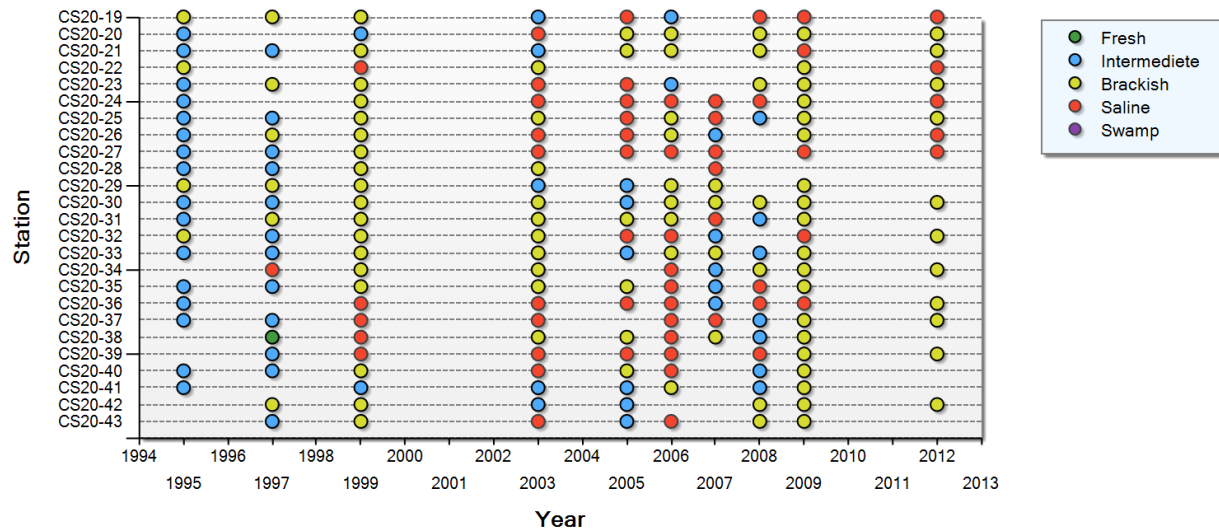
Floristic Quality Index for CS20



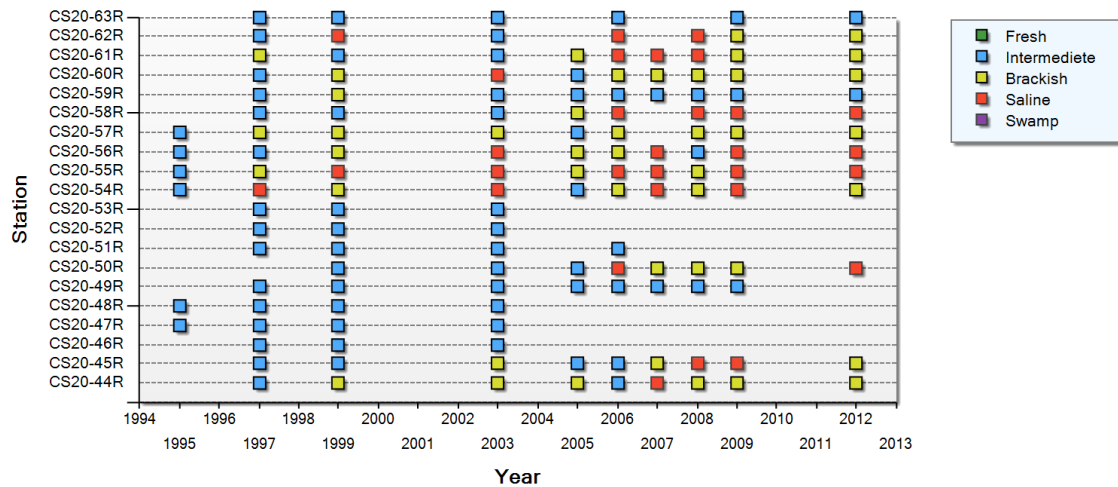


## Project Marsh Class

Project Marsh Classification  
CS20



Project Marsh Classification  
CS20 Reference





# Charting-Vegetation: Multi-Station Example

[Previous Charting Version](#)

Charting

Bulk Charting

Data Download

Reporting

▶ Hydro

▼ Vegetation

Forested

Herbaceous

Site Floristic Quality Index

Project/Reference FQI

Marsh Class

▶ Soil

▶ Spatial

▶ Report Card Charts

Clear Charts

Scale: Multi Station

Year: 2008

Select an element below to populate the station selector.

CRMS0661  
CRMS0662  
CRMS0663  
CRMS0665  
CRMS0669  
CRMS0672

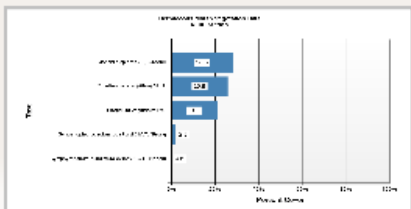
Select All

Deselect All

CRMS0672-V08 8/13/2008  
CRMS0672-V16 8/13/2008  
CRMS0672-V26 8/13/2008  
CRMS0672-V57 8/13/2008  
CRMS0672-V67 8/13/2008  
CRMS0672-V78 8/13/2008

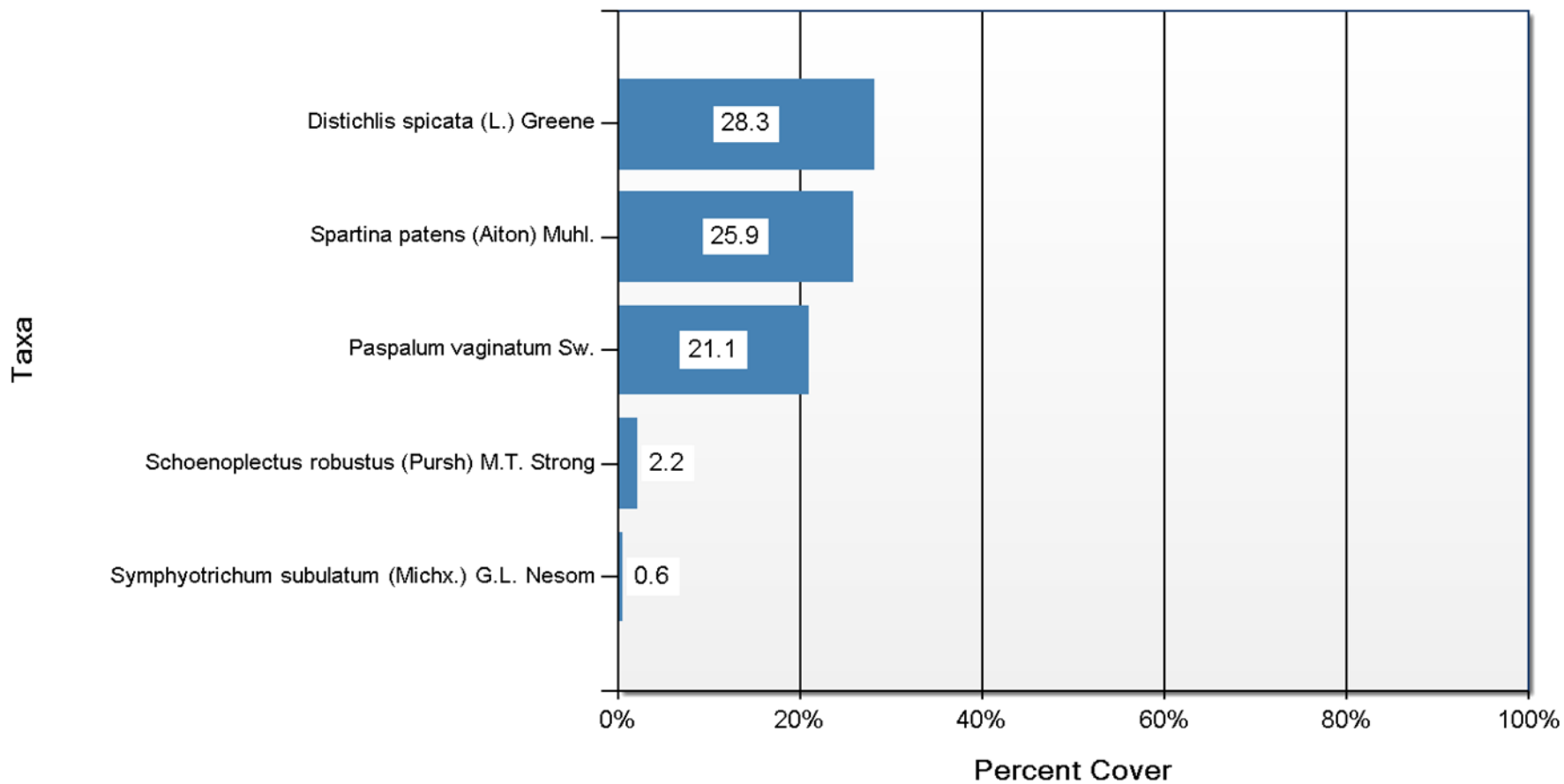
CRMS0672-V06 8/13/2008  
CRMS0672-V09 8/13/2008  
CRMS0672-V47 8/13/2008  
CRMS0672-V64 8/13/2008  
CS20-19 9/23/2008

Submit Request

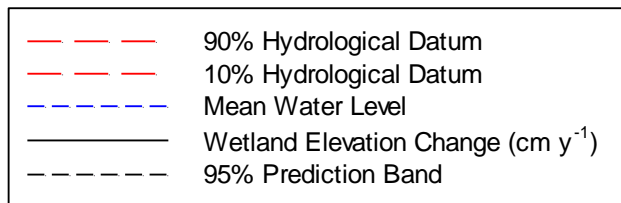
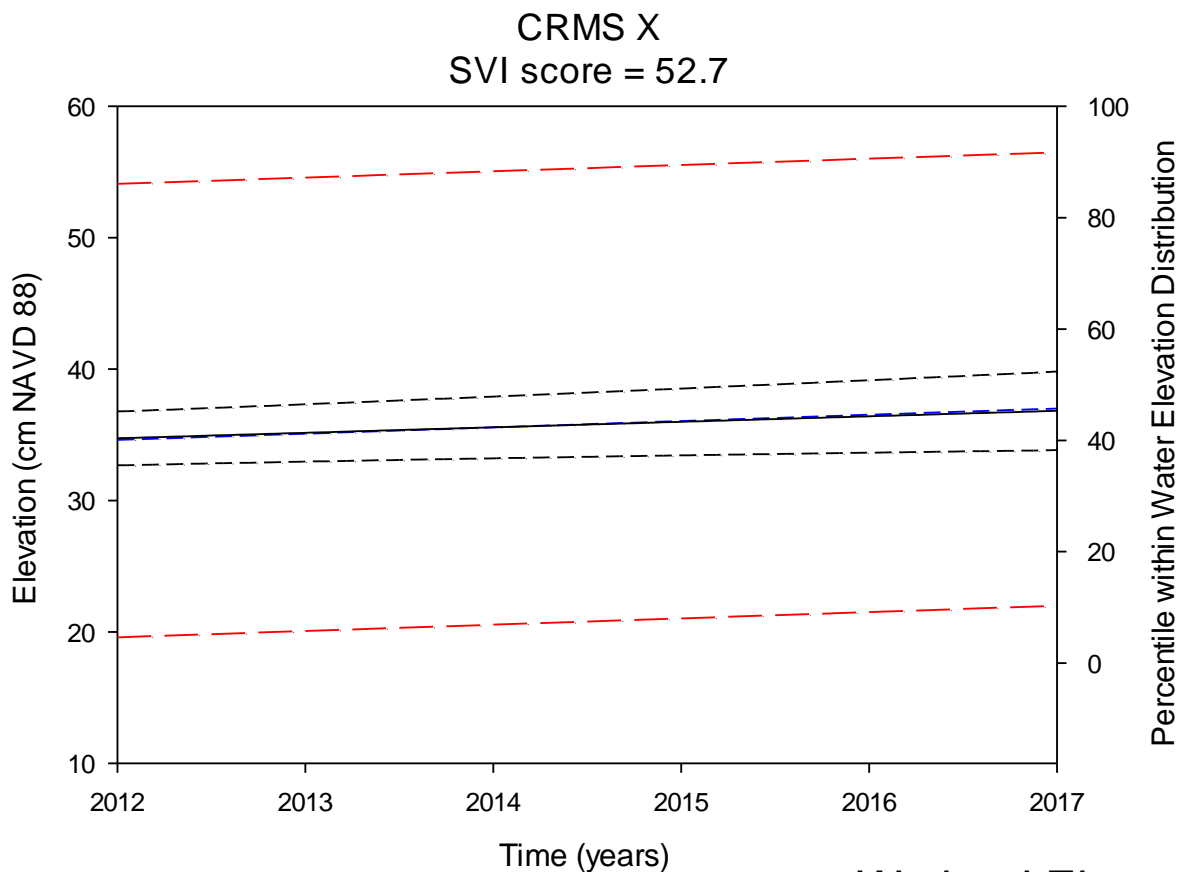




Herbaceous Marsh Vegetation Data  
Multi Station







Wetland Elevation Change = 0.42 cm y<sup>-1</sup>

Accretion = 0.59 cm y<sup>-1</sup>

Shallow Subsidence = 0.17 cm y<sup>-1</sup>

ESLR = 0.31 cm y<sup>-1</sup>

Site Relative Water Level Trend = 0.48 cm y<sup>-1</sup>

SVI Score = 52.7



# Charting-Report Card: Available Charts

[Previous Charting Version](#)

Charting

Bulk Charting

Data Download

Reporting

▶ Hydro

▶ Vegetation

▶ Soil

▶ Spatial

▼ Report Card Charts

Site Hydro Index

Hydro Index

Hydro Completeness

Site Floristic Quality Index

Floristic Quality Index

Site Index and Marsh Type Box Plot

Site Index and Multiple Spatial Scales Box Plot

Index Site Scores

Percent Land

Data Availability

Clear Charts



# Bulk Charting: Vegetation Example

[Previous Charting Version](#)

Charting Bulk Charting Data Download Reporting

## Bulk Charting

▶ Hydro

▼ Vegetation

Forested  
Herbaceous  
Site Floristic Quality Index  
Project/Reference FQI  
Marsh Class

▶ Soil

▶ Spatial

▶ Report Card Charts

Basin: All Basins ▼

Project: All Projects ▼

Select All	Deselect All
CRMS0002	CRMS0153
CRMS0003	CRMS0154
CRMS0006	CRMS0156
CRMS0008	CRMS0157
CRMS0030	CRMS0159
CRMS0033	CRMS0161
CRMS0034	CRMS0162
CRMS0035	CRMS2627

Choose Colors

Cancel

Submit Request

- Select Type
- Select Sites
- Define species color ramp (optional)
- Provide email
- View zipped package



# Bulk Charting: Vegetation Example

Choose Colors

Cancel

	Phragmites australis
	Vigna luteola
	Polygonum punctatum
	Alternanthera philoxeroides
	Zizaniopsis miliacea
	Schoenoplectus americanus
	Panicum repens
	Schoenoplectus deltarum
	Sagittaria platyphylla
	Colocasia esculenta
	Mikania scandens
	Sagittaria lancifolia
	Sagittaria latifolia
	Sagittaria montevidensis
	Schoenoplectus pungens
	Lindernia dubia
	Typha domingensis
	Echinochloa walteri
	Schoenoplectus tabernaemontani
	Spartina patens
	Spartina alterniflora
	Schoenoplectus robustus
	Distichlis spicata
	Other

- Select Type
- Select Sites
- Define species color ramp (optional)
- Provide email
- View zipped package



# Bulk Charting: Vegetation Example

<input type="checkbox"/>	Schoenoplectus tabernaemontani
<input checked="" type="checkbox"/>	Spartina patens
<input type="checkbox"/>	Spartina alterniflora
<input type="checkbox"/>	Schoenoplectus robustus
<input type="checkbox"/>	Distichlis spicata
<input type="checkbox"/>	Other

email@email.com

- Select Type
- Select Sites
- Define species color ramp (optional)
- Provide email
- View zipped package

noreply@usgs.gov

to me

Bulk Data Download request.

Zip file containing request can be found at:

[http://www.lacoast.gov/crms2/crms\\_public\\_data/GenerateChartsFromDB/ZippedFiles/322\\_Site\\_Floristic\\_Quality\\_Index.zip](http://www.lacoast.gov/crms2/crms_public_data/GenerateChartsFromDB/ZippedFiles/322_Site_Floristic_Quality_Index.zip)

VegReportCardChart\_CRMS01532013220104514281  
 VegReportCardChart\_CRMS01532013220104514281  
 VegReportCardChart\_CRMS01542013220104537259  
 VegReportCardChart\_CRMS01542013220104537259  
 VegReportCardChart\_CRMS01562013220104558569  
 VegReportCardChart\_CRMS01562013220104558569  
 VegReportCardChart\_CRMS01572013220104616431  
 VegReportCardChart\_CRMS01572013220104616431  
 VegReportCardChart\_CRMS01592013220104634386  
 VegReportCardChart\_CRMS01592013220104634386  
 VegReportCardChart\_CRMS01612013220104652404  
 VegReportCardChart\_CRMS01612013220104652404  
 VegReportCardChart\_CRMS01622013220104711966  
 VegReportCardChart\_CRMS01622013220104711966  
 VegReportCardChart\_CRMS26272013220104733167  
 VegReportCardChart\_CRMS26272013220104733167



Previous Charting Version		Previous Charting Version		Previous Charting Version			
Charting	Bulk Char	Charting	Bulk Chartin	Charting	Bulk Charting	Data Download	Reporting
<b>Data Download</b>  Data available through or derived values base are available from the :		<b>Data Download</b>  Data available through th or derived values based c are available from the SO		<b>Data Download</b>  Data available through this website are calculated or derived values based on the original data which are available from the SONRIS database <a href="#">(SONRIS)</a>			
▼ Hydro		▶ Hydro		▶ Hydro			
Hydro Averages Hydro Index Percent Flooded Water Level Range		▼ Vegetation		▶ Vegetation			
▶ Vegetation		Basal Area Floristic Quality Index Marsh Class Veg Percent Cover		▼ Spatial			
▶ Spatial		▶ Spatial		Percent Land			



# Bulk Data Download: Example

- Select Type
- Select Years
- Station selection
- Provide email
- View zipped package

[Previous Charting Version](#)

Charting

Bulk Charting

Data Download

Reporting

## Data Download

Data available through this website are calculated or derived values based on the original data which are available from the SONRIS database ([SONRIS](#))

### ▼ Hydro

Hydro Averages

Hydro Index

Percent Flooded

Water Level Range

► Vegetation

► Spatial

Water Year is October 1 - September 30

Year:

<input type="button" value="Select All"/>		<input type="button" value="Deselect All"/>	
2001	<div>▲</div> <div>▼</div>	2010	
2002		2009	
2003		2008	
2004			
2005			
2006			
2007			
2011			
2012			



# Bulk Data Download: Example

Year:

Select All	Deselect All
1987	2008
1992	2009
1993	2010
1994	
1995	
1996	
1997	
1998	
1999	

Submit

Basin: All Basins

Project: All Projects

Select All	Deselect All
BA01-01	
BA01-02	
BA01-03	
BA01-04	
BA01-07	
BA01-09	
BA01-10	
BA01-14	
BA01-15	

Email Address:

CS-27  
CS-28  
CS-29  
CS-31  
CS-32  
DCPT  
ME-04  
ME-11  
ME-16  
ME-17  
ME-20  
ME-23  
MR-06  
MR-09  
MR-13  
NA  
PO-06  
PO-17  
PO-22  
PO-24

Request

- Select Type
- Select Years
- Station selection
- Provide email
- View zipped package

Basin: All Basins

Project: MR-09

Select All	Deselect All
CRMS0161-H01	CRMS0153-H01
CRMS0162-H01	CRMS0154-H01
CRMS2627-H01	CRMS0156-H01
CRMS2634-H01	CRMS0157-H01
CRMS4448-H01	CRMS0159-H01
CRMS4626-H01	

Email Address: email@email.com

Submit Request





# Bulk Data Download: Example

- Select Type
- Select Years
- Station selection
- Provide email
- View zipped package

Year:

Select All	Deselect All
1987	2008
1992	2009
1993	2010
1994	
1995	
1996	
1997	
1998	
1999	

Submit

Basin: All Basins

Project: MR-09

Select All	Deselect All
CRMS0161-H01	CRMS0153-H01
CRMS0162-H01	CRMS0154-H01
CRMS2627-H01	CRMS0156-H01
CRMS2634-H01	CRMS0157-H01
CRMS4448-H01	CRMS0159-H01
CRMS4626-H01	

Email Address: email@email.com

Submit Request

noreply@usgs.gov

to me

Bulk Data Download request.

Zip file containing request can be found at:

[http://www.lacoast.gov/crms2/crms\\_public\\_data/GenerateDataFromDB/ZippedFiles/297\\_PercentFlooded.zip](http://www.lacoast.gov/crms2/crms_public_data/GenerateDataFromDB/ZippedFiles/297_PercentFlooded.zip)

297 [Read-Only]

	A	B	C	D
1	Station Id	PercentFlooded	Year	PercentComplete
2	CRMS0153-H01	0.996009893	2008	0.829680365
3	CRMS0153-H01	0.992569647	2009	0.921803653
4	CRMS0153-H01	0.998626519	2010	0.997374429
5	CRMS0154-H01	0.51837899	2008	1
6	CRMS0154-H01	0.623563627	2009	0.784817352
7	CRMS0154-H01	0.779207572	2010	0.674200913
8	CRMS0156-H01	0.609246568	2008	1
9	CRMS0156-H01	0.607944132	2009	0.997260274
10	CRMS0156-H01	0.811033526	2010	0.997374429
11	CRMS0157-H01	0.865248217	2008	0.997945205
12	CRMS0157-H01	0.866490634	2009	0.994406393
13	CRMS0157-H01	0.884518858	2010	0.887868874



[Previous Charting Version](#)

Charting

Bulk Charting

Data Download

Reporting

## Generate Report Card

Year: 2009

### Generate Report Card

Site Level Report

Project Level Report

Basin Level Report

Coastwide Level Report

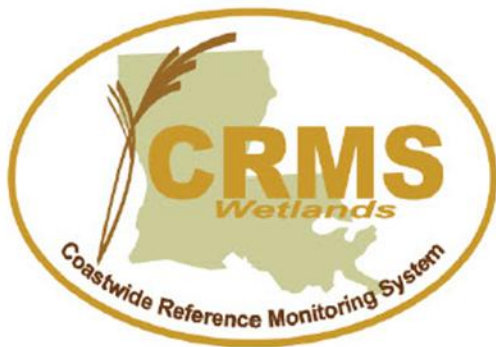
OM&M

Clear Reports

CRMS0565  
CRMS0567  
CRMS0568  
CRMS0570  
CRMS0571  
CRMS0572  
CRMS0574  
CRMS0575  
CRMS0576  
CRMS0580  
CRMS0581  
CRMS0583

Submit Request

[Report Card CRMS0583 2009](#)



## Coastwide Reference Monitoring System (CRMS)

### Site Level Report Card

Site: CRMS0583

Year: 2009



6/18/2012

### About the Interactive Report Card

Through the Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA) a comprehensive, standardized monitoring and assessment program has been developed to evaluate coastal restoration projects throughout the Louisiana coastal zone. The Coastwide Reference Monitoring System (CRMS) collects monitoring data for numerous ecological variables. Using CRMS data, indices have been developed to assess wetland hydrology, vegetation, and soils. This interactive report card provides summary information and displays index scores for individual CRMS sites, restoration projects, hydrologic basins, and the entire Louisiana coast.

### Index Development

#### What is an Index?

An index combines and synthesizes scientific data to help inform or assess a topic of interest. Each index helps explain the condition of a particular aspect of the coastal wetland ecosystem. By comparing indices at various time and spatial scales we can understand the overall condition of coastal wetlands in Louisiana.

#### How were the indices developed?

CRMS Analytical Teams, made up of agency and academic personnel, developed indices based on the suite of parameters available from the 2006 to 2009 CRMS dataset. Three indices have been developed: a floristic quality (FQI), hydrologic (HI), and submergence vulnerability (SVI), and a landscape index is currently being refined. Wetland vegetation, hydrology, and soils are undeniably interconnected and form the basis for ecological processes that ultimately influence future land change and the sustainability of coastal habitats. Although these indices have been developed using 4 years of baseline CRMS data, the indices will be refined to better define ecological relationships as the data set becomes more robust overtime.

Because no regulatory thresholds exist for the ecological parameters of interest, it was not possible to assess index scores based on previously defined values that would indicate an acceptable or unacceptable score. Therefore, for the FQI and the HI, assessments were made relative to a baseline distribution of the index scores derived from 2006 to 2009 data at CRMS sites across the Louisiana coast. Because ideal thresholds were not available for the FQI and HI, scores were classified as 'good' (green) if they exceeded the 75th percentile of index scores calculated for all CRMS sites during the baseline period, 'poor' (red) if they did not exceed the 25th percentile, or 'fair' (yellow) if they were intermediate to the 25th and 75th percentiles (Figure 1).

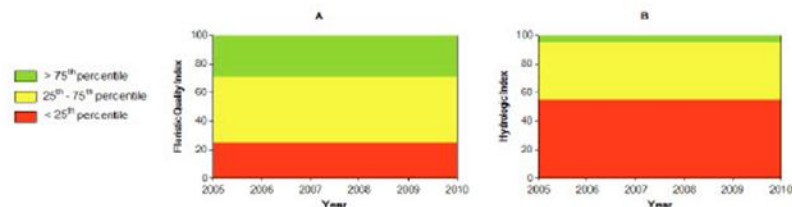


Figure 1. Example of how classifications change based on the assessment index and index score distribution. A) Floristic Quality Index distribution and B) Hydrologic Index distribution based on coastwide data from 2006 to 2009.



# Reporting: OM&M Report

[Previous Charting Version](#)

Charting

Bulk Charting

Data Download

Reporting

## Generate Report Card

State Number: MR-09

▶ Generate Report Card

▼ OM&M

OM&M report

Clear Reports

[Report Card MR-09 2004 Operations, Maintenance, and Monitoring Report](#)

[Report Card MR-09 2009 Operations, Maintenance & Monitoring Report](#)



Coastal Protection and Restoration  
Authority of Louisiana  
Office of Coastal Protection and  
Restoration

**2009 Operations, Maintenance and  
Monitoring Report**

For

**DELTA WIDE CREVASSES**

State Project Number MR-09  
Priority Project List 6

August 1, 2009  
Plaquemines Parish

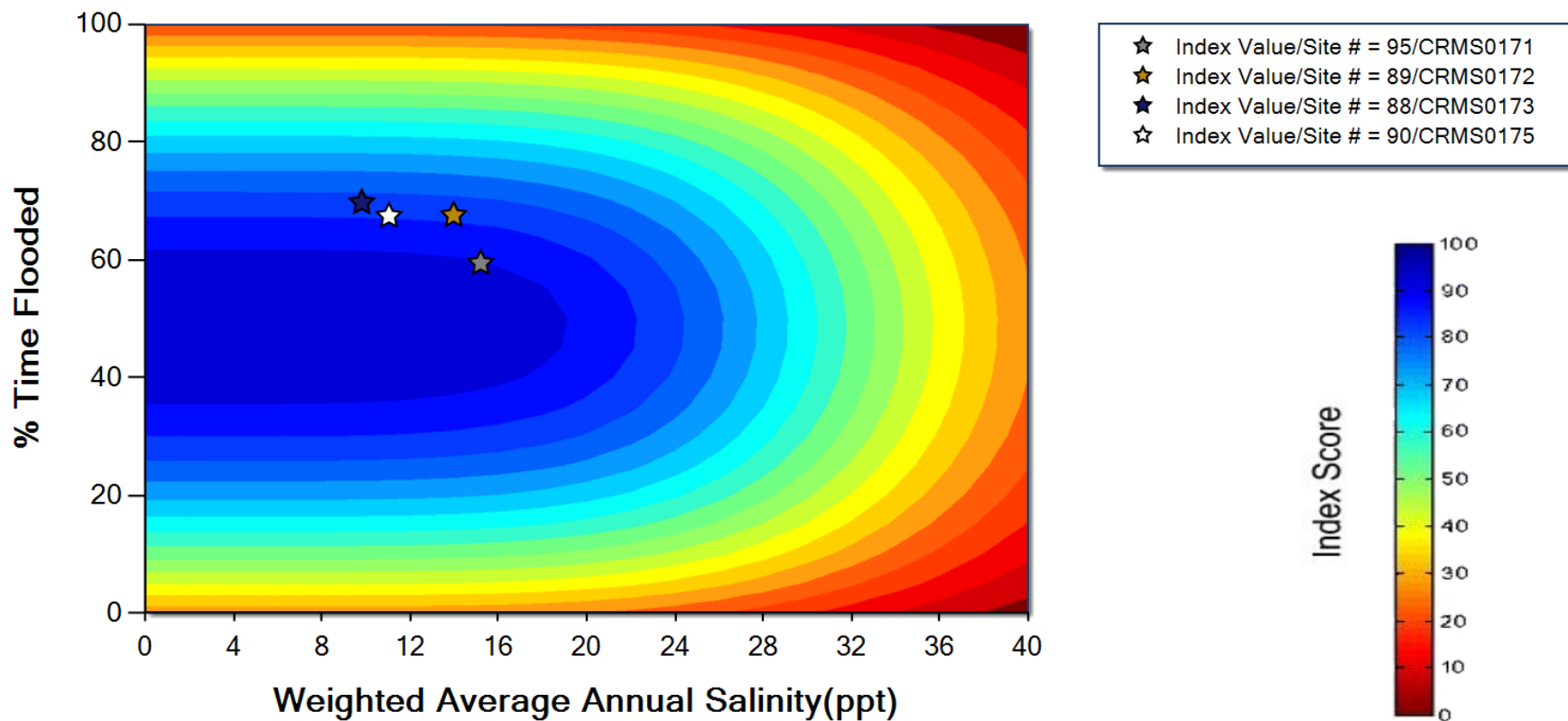
Prepared by:

Bryan Gossman

CPRA/Office of Coastal Protection and Restoration  
New Orleans Field Office  
CERM, Suite 309  
2045 Lakeshore Dr.  
New Orleans, La 70122

Limited to 5 sites which have a common marsh type in the same water year.

## Hydrologic Index for 2010 Saline Marsh



[Previous Charting Version](#)

Charting

Bulk Charting

Data Download

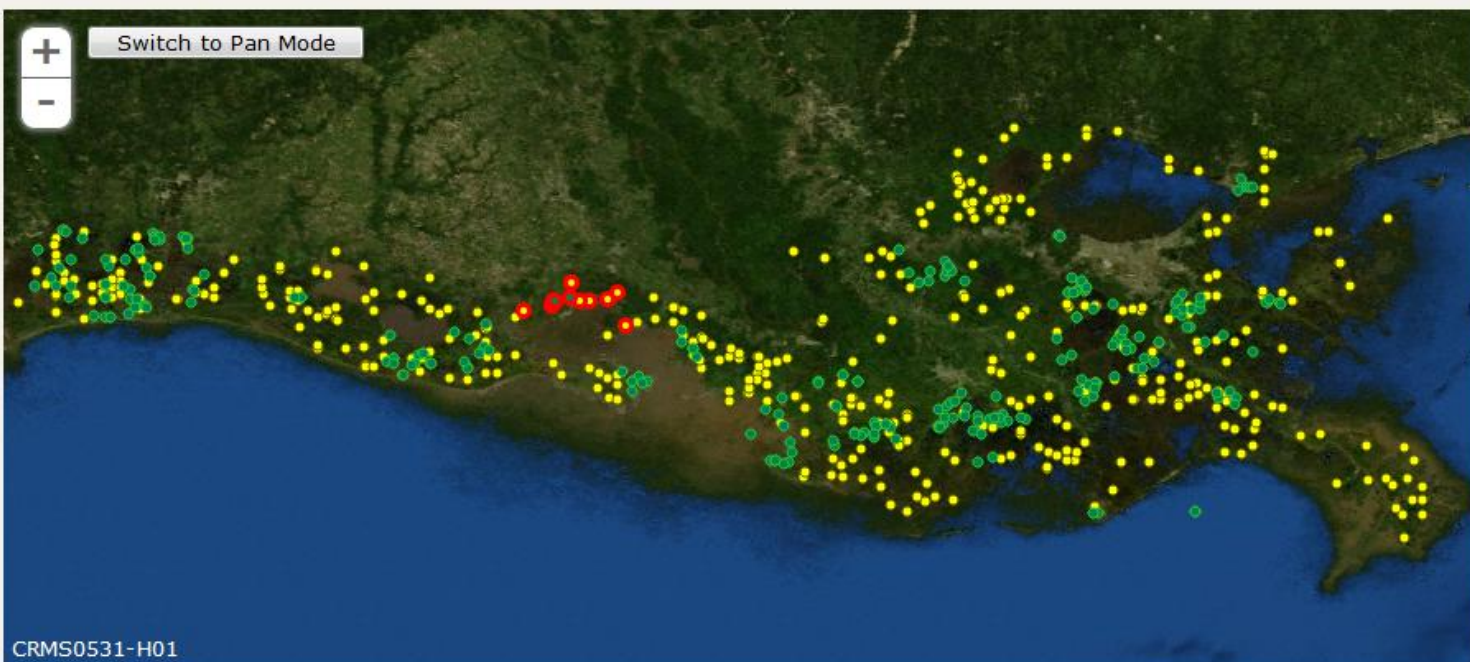
Reporting

▼ Hydro

Water Year is October 1 - September 30

Scale:  Map:

Select Mode - Drag the Mouse inside the map to select stations.



● CRMS Stations

● CWPPRA Stations

Clear Selected

Submit





# Mapping

## • Released to Production

- New Map interface using ESRI JavaScript API
- Improvements to various “bubble” windows/tabs
- Improvements to vegetation difference layer
- Improvements to “tools” interface
- Hydro basins is available as an active layer
- Added public lands layer

## • Staged

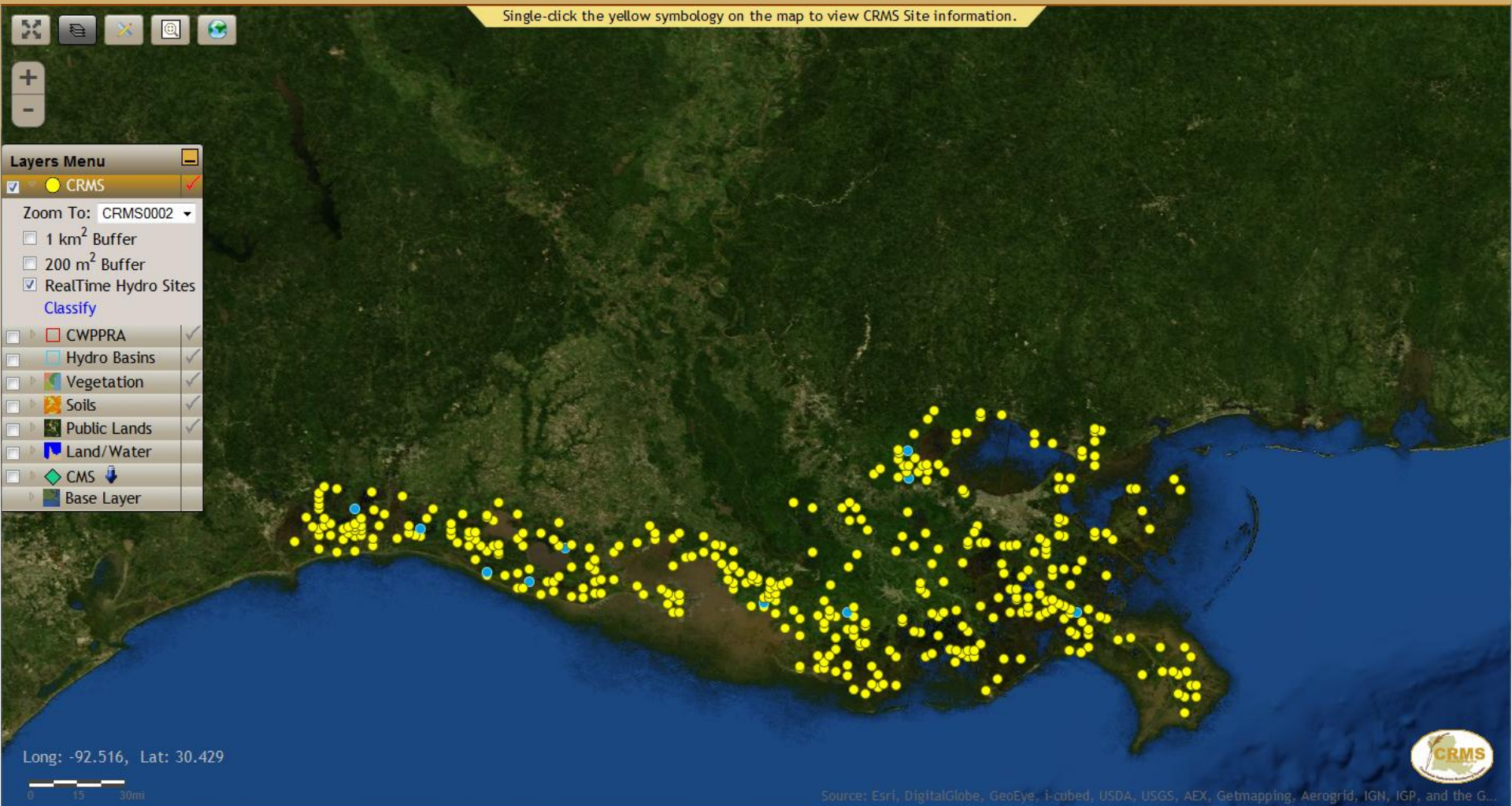
- Save map state, (current layers, active layer, zoom, map center)
- Additional numeric breakdown by basin of classified CRMS sites





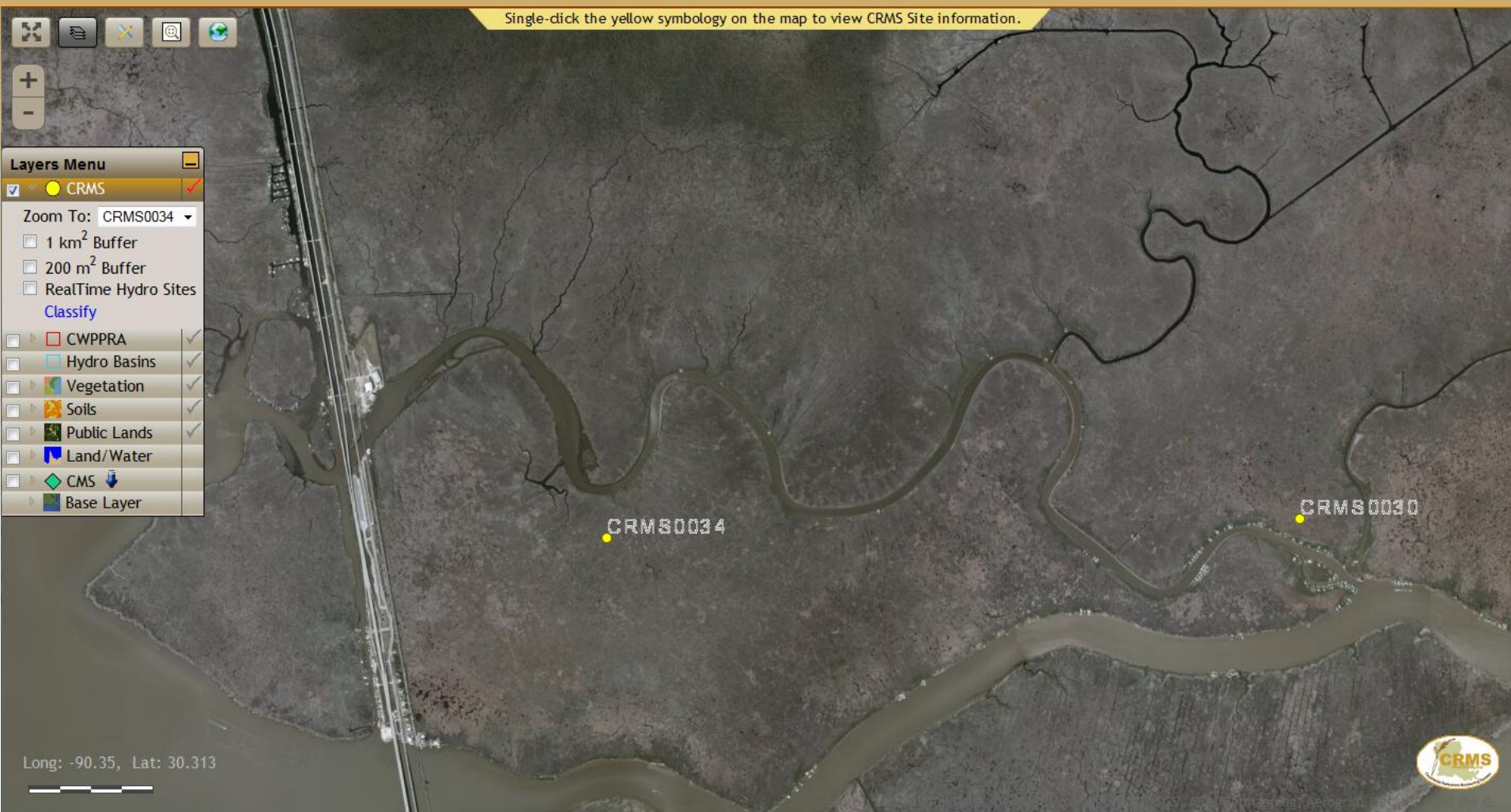


# CRMS Viewer: New Layer CRMS RealTime Hydro





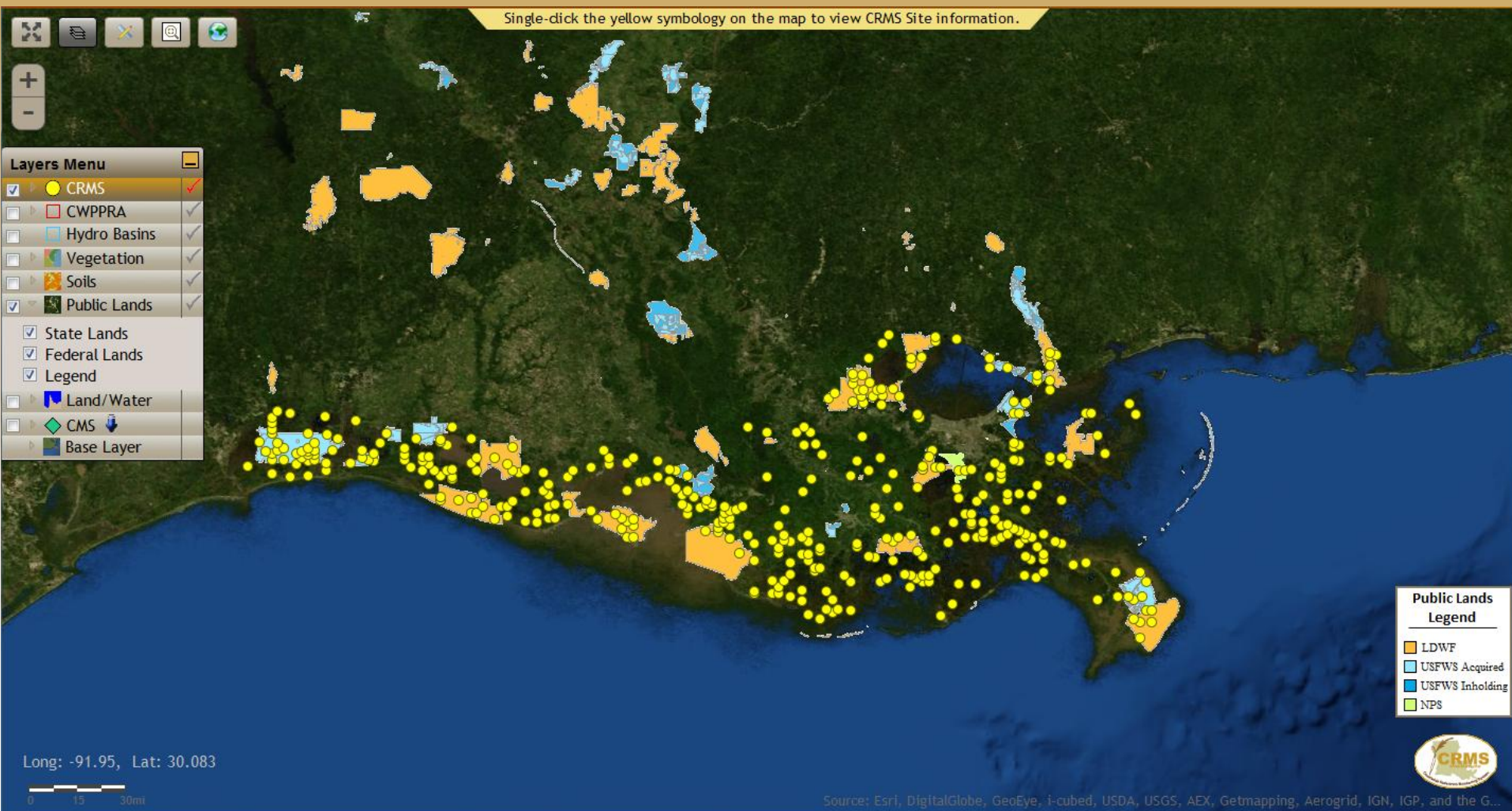
# CRMS Viewer: CRMS Labels







# CRMS Viewer: New Layer Public Lands





Single-click the yellow symbology on the map to view CRMS Site information.



Layers Menu

- ☒ CRMS
- ☐ CWPRA
- ☐ Hydro Basins
- ☐ Vegetation
- ☐ Soils
- ☐ Public Lands
- ☐ Land/Water
- ☐ CMS
- ☐ Base Layer

World Imagery

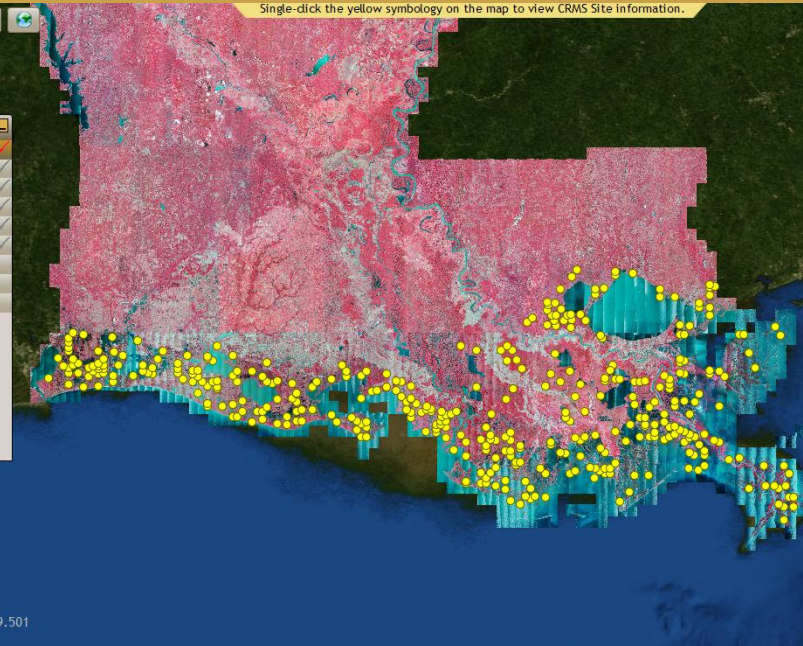
- ☐ DOQQ 2008 NC
- ☐ DOQQ 2008 CIR
- ☒ DOQQ 2010 CIR

World Shaded Relief

- ☐ World Street
- ☐ World Topography
- ☐ World Grayscale

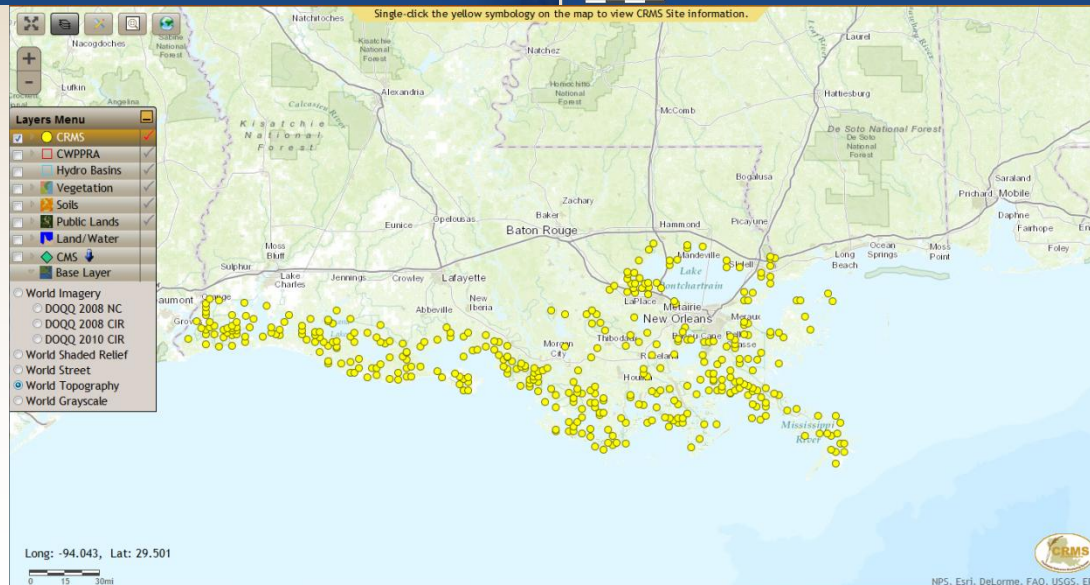
Long: -94.043, Lat: 29.501

Single-click the yellow symbology on the map to view CRMS Site information.



Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USG

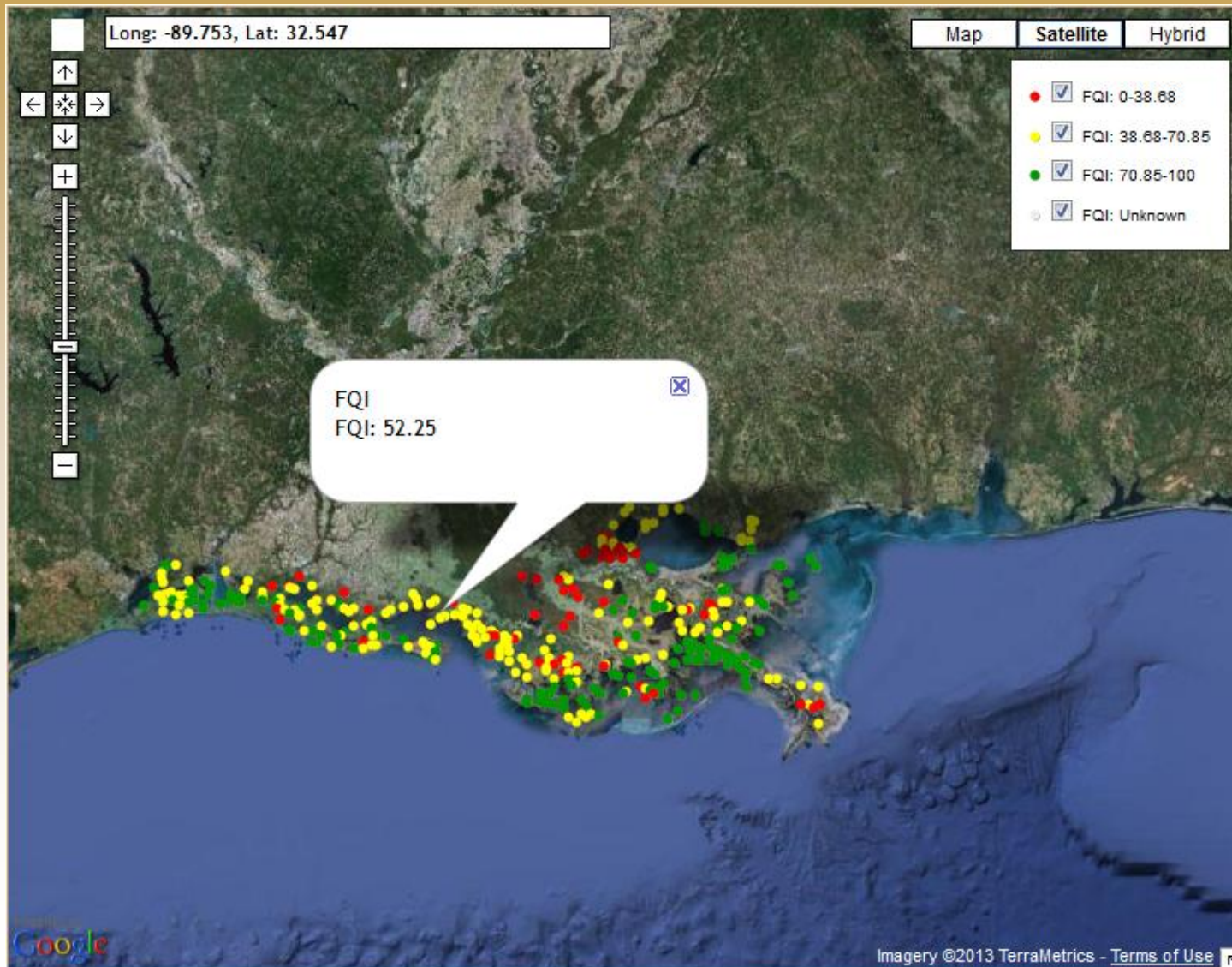
Single-click the yellow symbology on the map to view CRMS Site information.





# Tools Interfaces





**Layers** **Tools**

- **Classify CRMS Sites** ☐

Type:  
Vegetation

Attribute:  
FQI

Year:  
2010

Range:  to

Intervals:

- **Acreeage Assessment**

## Classified Site Info

Single-click the multicolored symbology on the map to view Classified CRMS Site information.

Beta: Fullscreen



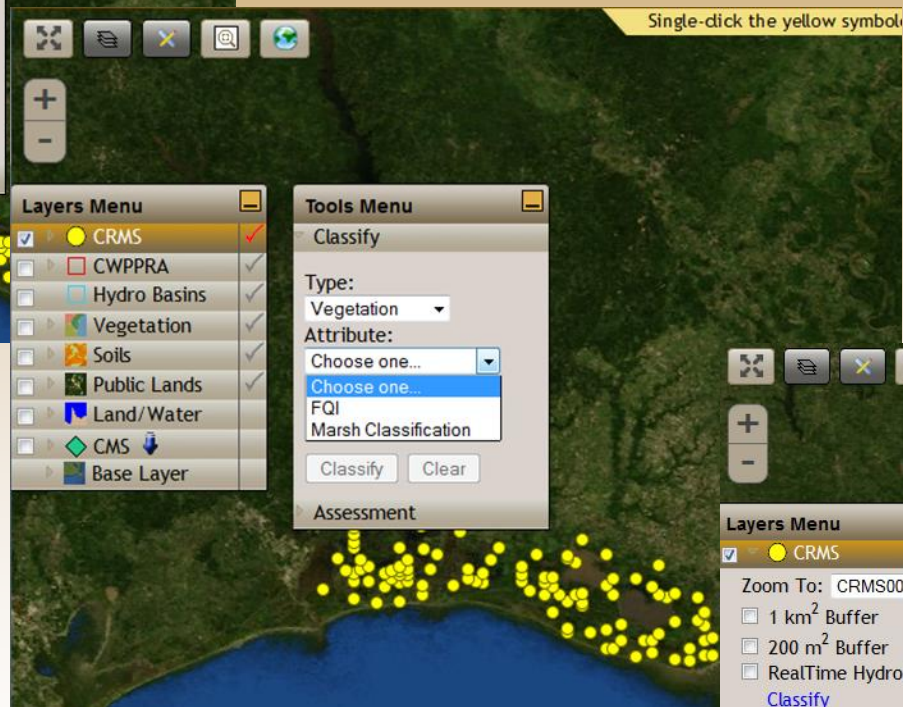
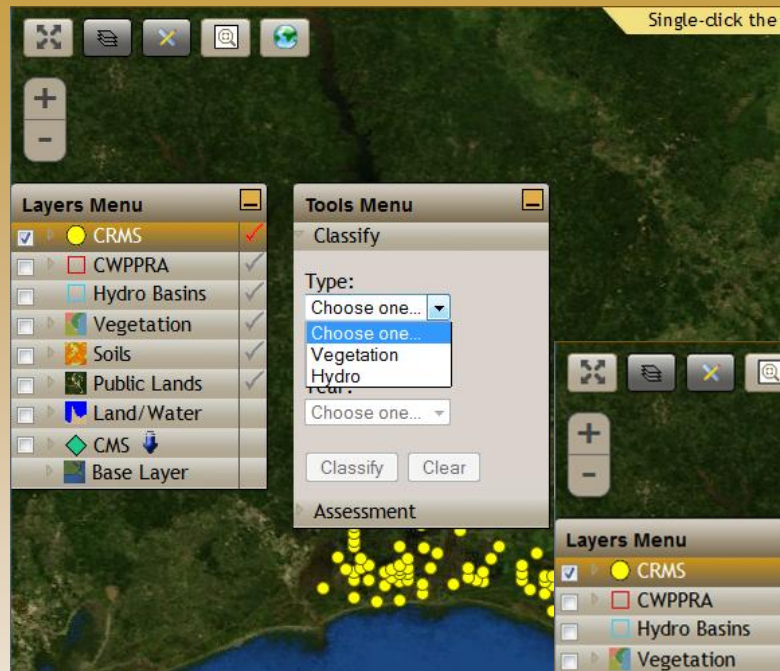
# CRMS Viewer: Classification Tool







# CRMS Viewer: Classification Tool







# CRMS Viewer: Classification Tool

The screenshot displays the CRMS Viewer Classification Tool interface, which includes a map of wetlands with colored points (yellow, red, green, white) representing different classifications. The interface features several tool menus and a detailed information window.

**Layers Menu:**

- ☒ CRMS
- ☒ CWPPRA
- ☒ Hydro Basins
- ☒ Vegetation
- ☒ Soils
- ☒ Public Lands
- ☒ Land/Water
- ☒ CMS
- ☒ Base Layer

**Tools Menu (Left):**

Classify

Type: Vegetation

Attribute: FQI

Year: 2010

Change Colors/Intervals

Range: 0 to 100

Intervals: 3

Classify Clear

Assessment

**Tools Menu (Right):**

Classify

Type: Vegetation

Attribute: FQI

Year: 2010

Change Colors/Intervals

Range: 0 to 100

Intervals: 3

Classify Clear

Assessment

**Information Window:**

Single-click the yellow symbology on the map to view CRMS Site Information.

Info | Water | Vegetation | Soil | Spatial | Report Card | Tools

Site ID: CRMS0493  
Lat, Long: 29.7519, -91.7605  
Marsh Elevation: 1.86ft NAVD1988 GEOID99

Data Availability: 2012

Pre/Post Construction Pictures:

- Preliminary Site Visit North
- Pre Construction
- Post Construction

Survey Report

FQI: 38.73

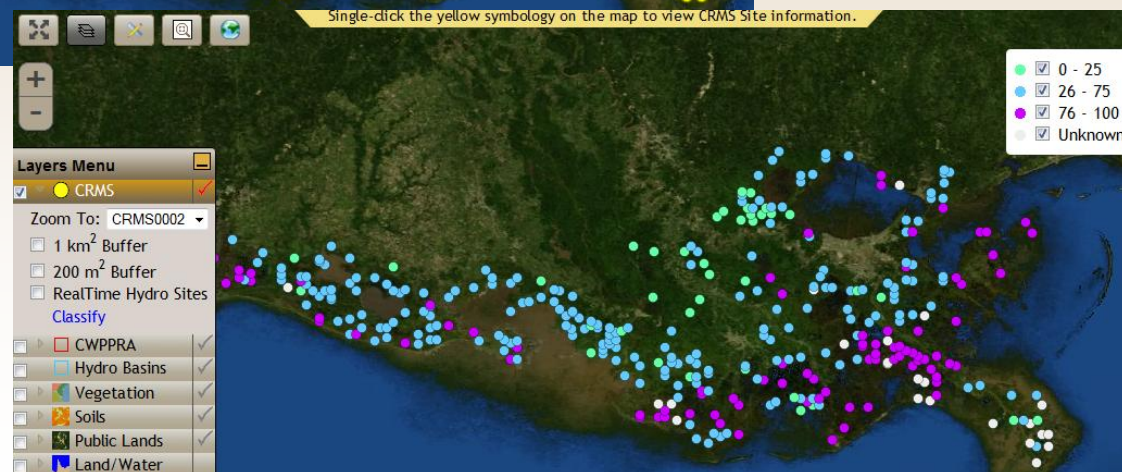
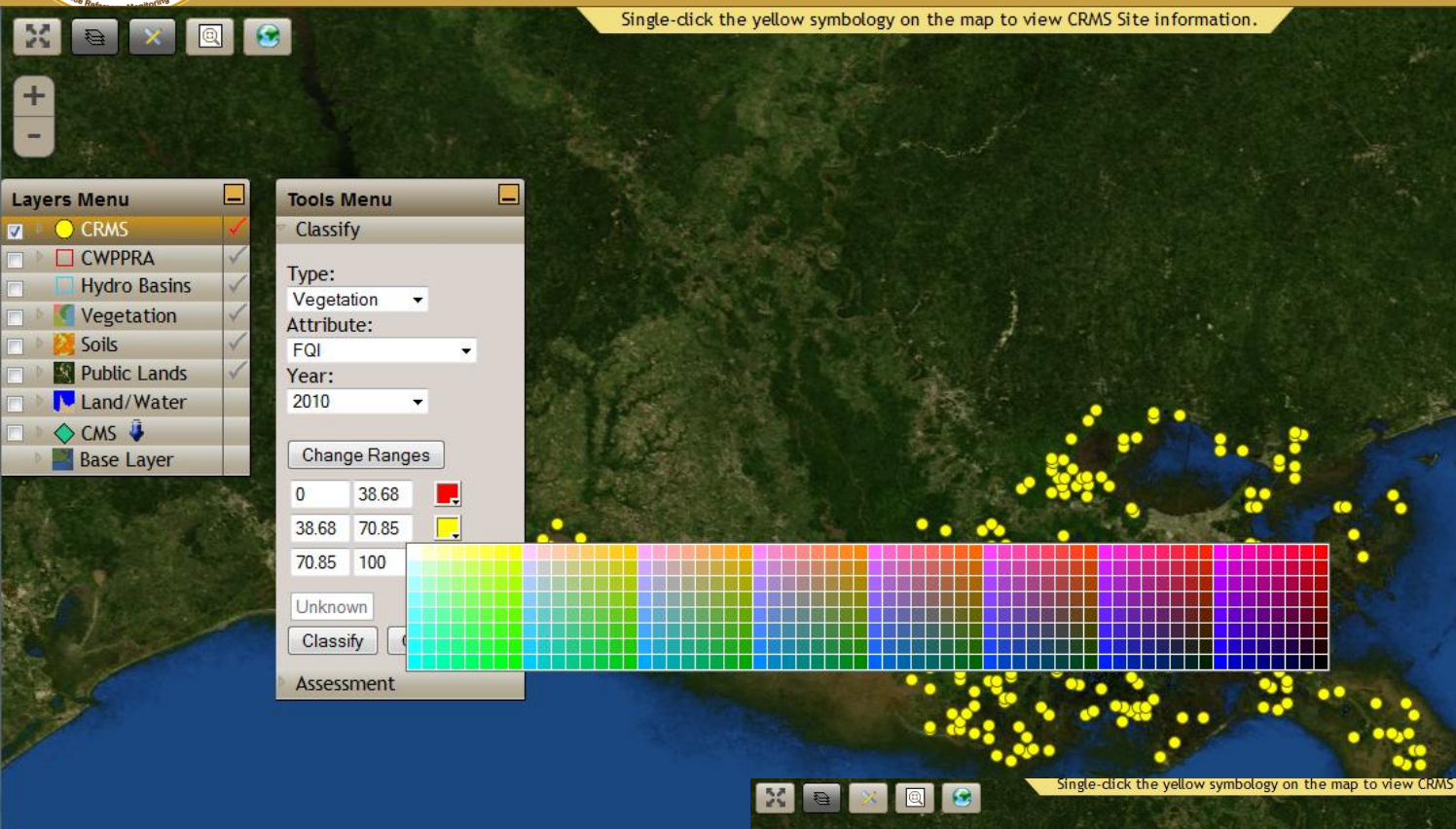
Long: -90.791, Lat: 29.916

Source: Esri, DigitalGlobe, GeoEye, iSat, USDA, USGS, AEX





# CRMS Viewer: Classification Tool





# CRMS Viewer: Assessment Tool - Veg

Single-click the yellow symbology on the map to view CRMS Site information.

The screenshot displays the CRMS Viewer Assessment Tool interface. The main map area shows a satellite view of a coastal region with yellow dots representing CRMS sites. A toolbar at the top left includes navigation and map controls, with a yellow 'X' icon circled in red. A yellow banner at the top right instructs users to 'Single-click the yellow symbology on the map to view CRMS Site information.'

On the left, the 'Layers Menu' lists several layers: CRMS (checked), CWWPPRA, Hydro Basins, Vegetation, Soils, Public Lands, and Land/Water (checked). Below the list is a '2008' dropdown, a 'Fill' slider set to 100, and a red circle around the 'Assessment' link. The 'Tools Menu' on the right includes 'Classify' and 'Assessment' options, with fields for 'Layer to assess:' (Land/Water), 'Bounding polygon layer:' (CRMS Sites (1Km Buffer)), 'Bounding polygon:' (CRMS0034), and 'Year to assess:' (2008), followed by an 'Acre Assess' button.

On the right, a panel titled 'CRMS0034 - 1Km<sup>2</sup> Acreage Assessment' is open, with the 'Tools' tab circled in red. It shows a timeline from 1956 to 2008 with a 'Click a Year to Assess' prompt. Below the timeline, the 'Coastwide Vegetation' layer is visible.

At the bottom left, the coordinates 'Long: -92.797, Lat: 32.895' are displayed.





# CRMS Viewer: Assessment Tool - Veg

Single-click the yellow symbology on the map to view CRMS Site information.

+

-

Layers Menu

☒ CRMS

☐ CWPRA

☐ Hydro Basins

☐ Vegetation

☐ Soils

☐ Public Lands

☒ Land/Water

2008

Fill: 100

Assessment

☐ CMS

☐ Base Layer

Tools Menu

Classify

Assessment

Layer to assess:

Land/Water

Bounding polygon layer:

CRMS Sites (1Km Buffer)

Bounding polygon:

CRMS0034

Year to assess:

2008

Acre Assess

CRMS0034 - 1Km<sup>2</sup> Acreage Assessment

Land/Water

1956

1978

1988

2004

2006

2008

Click a Year to Assess

CRMS0034 1Km<sup>2</sup> Land/Water for 2008

Land:

234.41 acres (96.03%)

Water:

9.69 acres (3.97%)

Total:

244.10 acres

Expand

Coastwide Vegetation

-Long: -92.813, Lat: 32.914



# CRMS Viewer: Assessment Tool - Veg

Single-click the yellow symbology on the map to view CRMS Site information.



**Layers Menu**

☒ CRMS

Zoom To: CRMS0034

☒ 1 km<sup>2</sup> Buffer

☐ 200 m<sup>2</sup> Buffer

☐ RealTime Hydro Sites

Classify

☐ CWPPRA

☐ Hydro Basins

☒ Vegetation

☐ Soils

☐ Public Lands

☐ Land/Water

☐ CMS

☐ Base Layer

Long: -90.424, Lat: 30.346

Info Water Vegetation Soil Spatial Report Card Tools

CRMS0034 - 1Km<sup>2</sup> Acreage Assessment

Land/Water

Coastwide Vegetation

Click a Year to Assess

CRMS0034 1Km<sup>2</sup> Coastwide Vegetation for 1997

Saline:	N/A
Fresh:	207.57 acres (84.00%)
Brackish:	N/A
Intermediate:	39.54 acres (16.00%)
Swamp:	N/A
Water:	N/A
Other:	N/A
Total:	247.11 acres

[Expand](#)



Single-click the yellow symbology on the map to view CRMS Site information.

**Layers Menu**

☒ CRMS

Zoom To: CRMS0034

- ☐ 1 km<sup>2</sup> Buffer
- ☐ 200 m<sup>2</sup> Buffer
- ☐ RealTime Hydro Sites

[Classify](#)


- ☒ CWPRA
- ☒ Hydro Basins
- ☒ Vegetation
- ☒ Soils
- ☒ Public Lands
- ☒ Land/Water
- ☒ CMS
- ☒ Base Layer

**Info** | Water | Vegetation | Soil | Spatial | Report Card | Tools


**Site ID:** CRMS0034  
**Lat, Long:** 30.3035, -90.3855  
**Marsh Elevation:** 0.98ft NAVD1988 GEOID99

**Data Availability:** 2012


**Pre/Post Construction Pictures:**




Post Construction




Pre Construction



Preliminary Site Visit North

 [Survey Report](#)

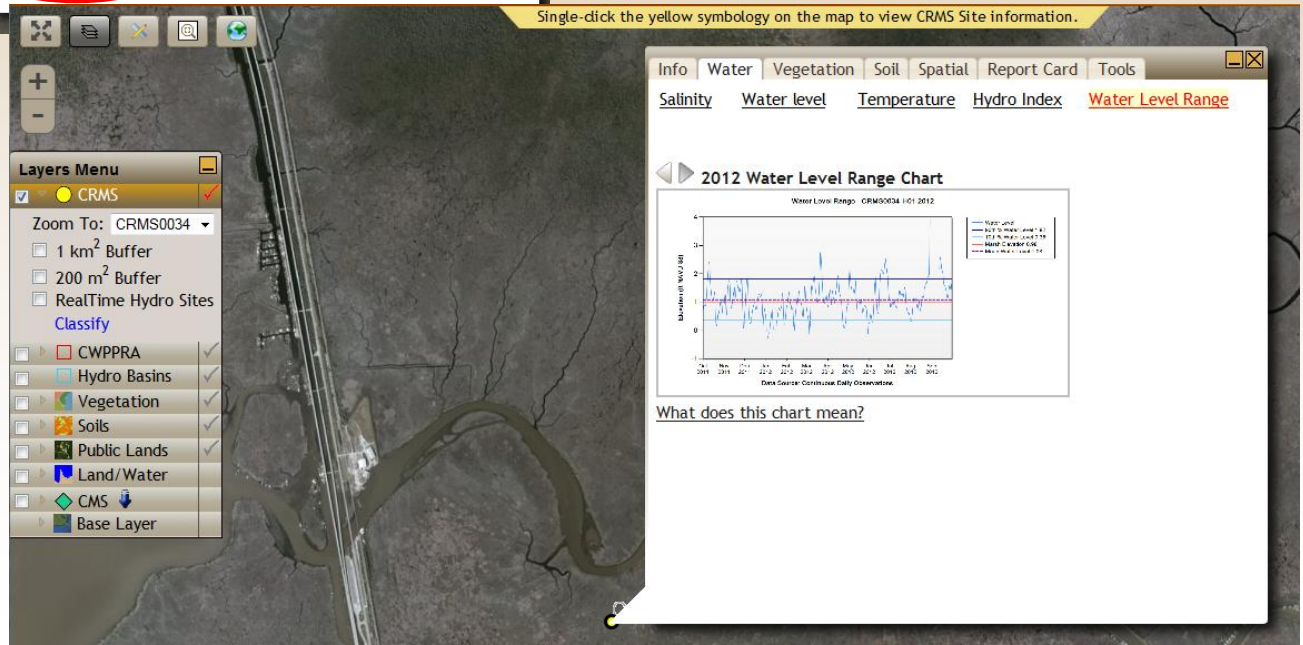
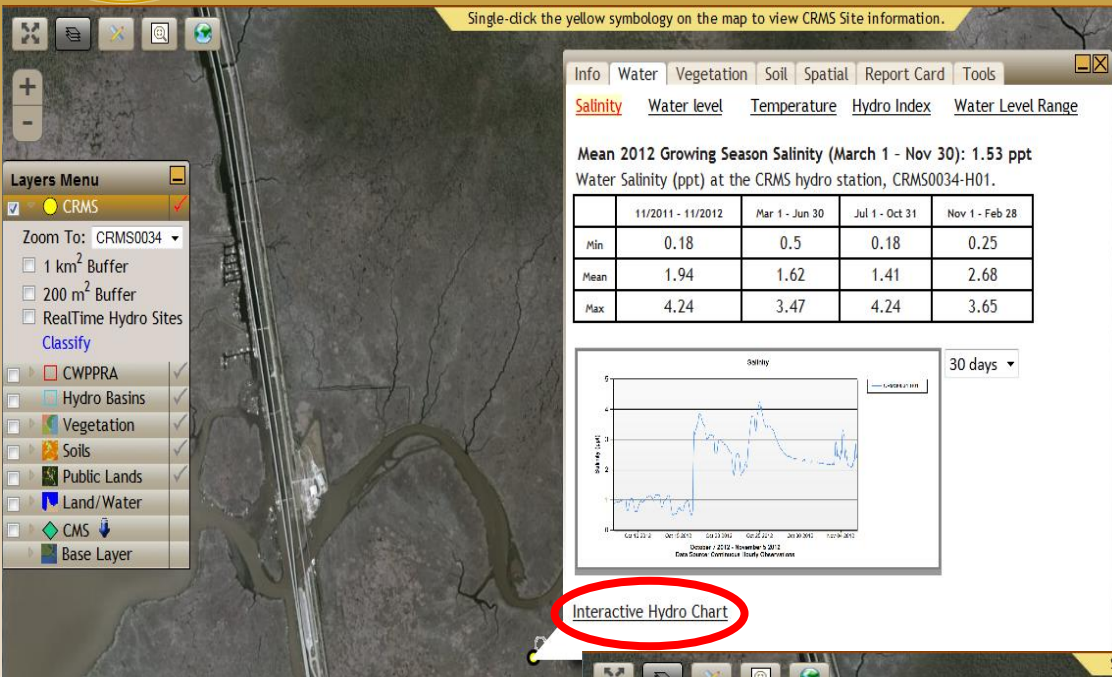
Long: -90.373, Lat: 30.302





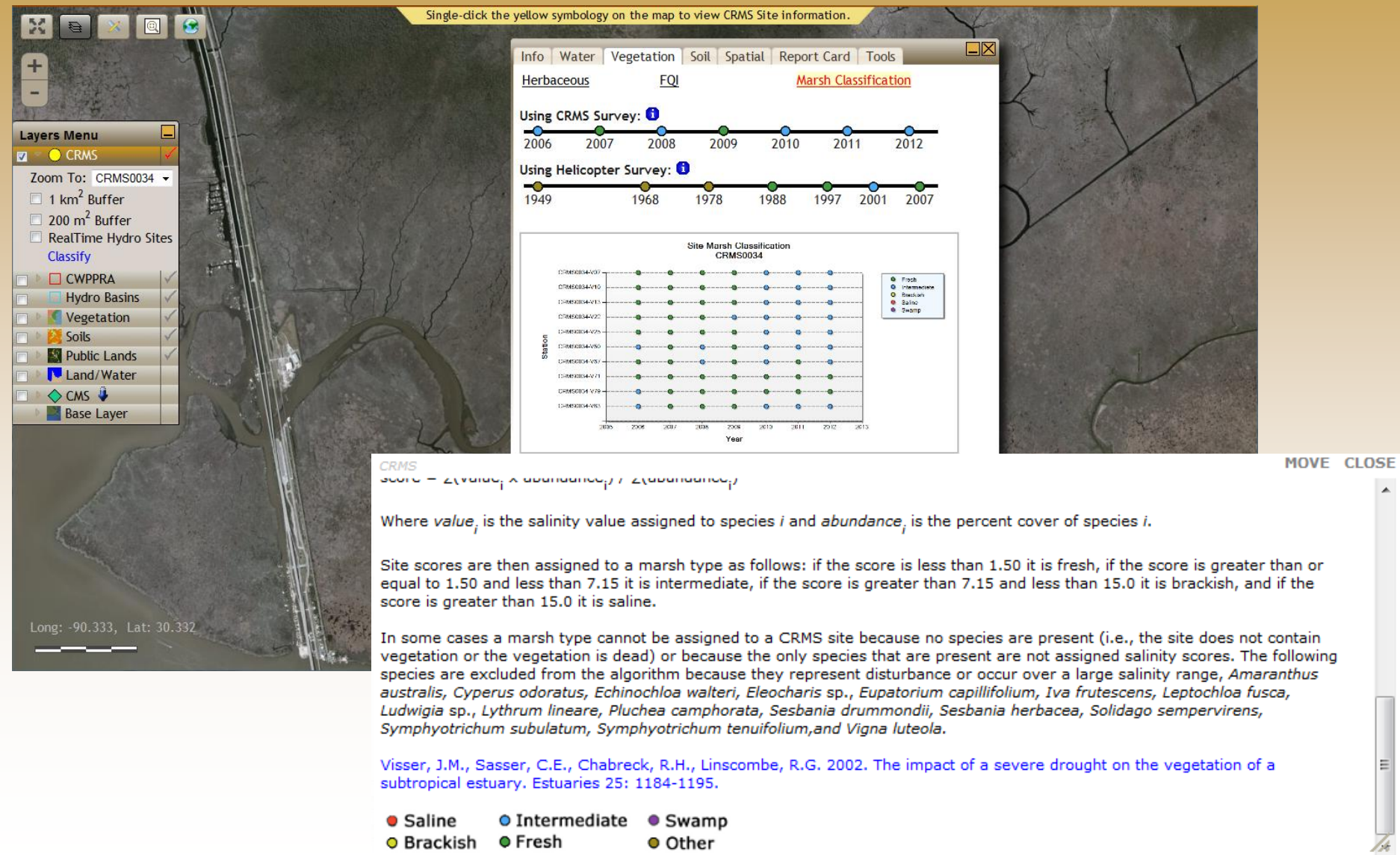


# CRMS Viewer: CRMS Hydro Tab



## Marsh Classification

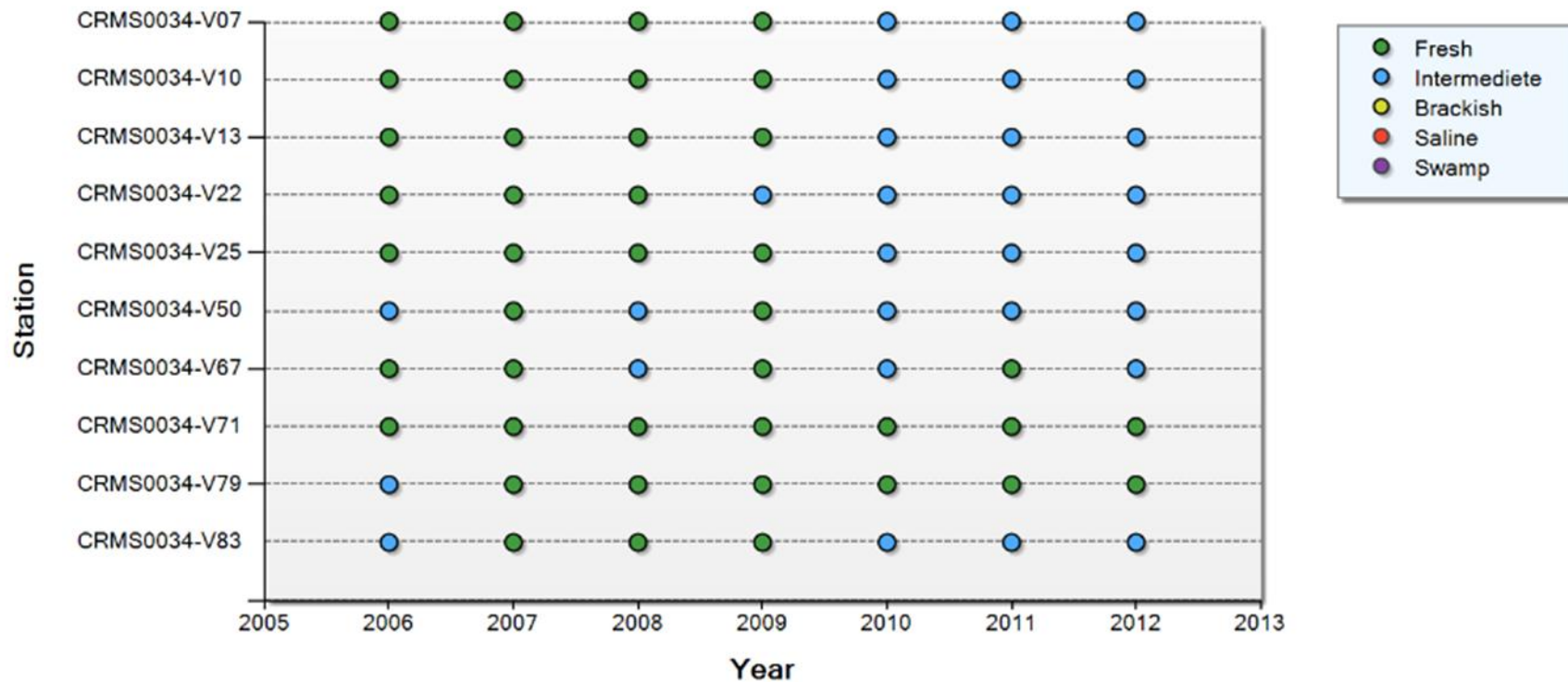
Colored year markers on time line result from averaging of site data within that year.





CRMS

## Site Marsh Classification CRMS0034

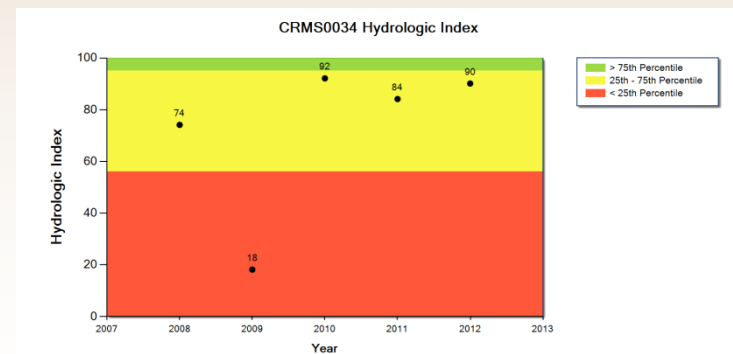
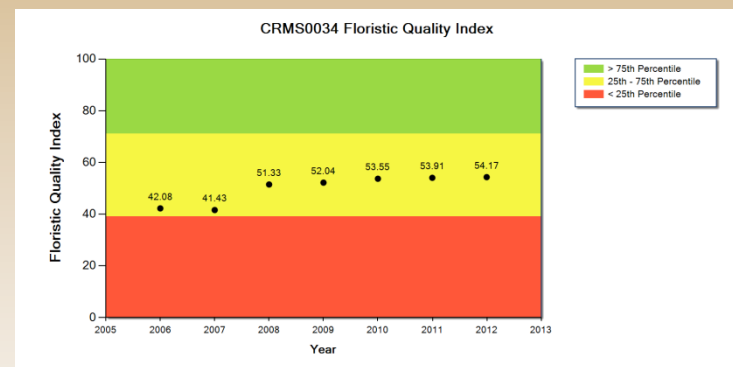
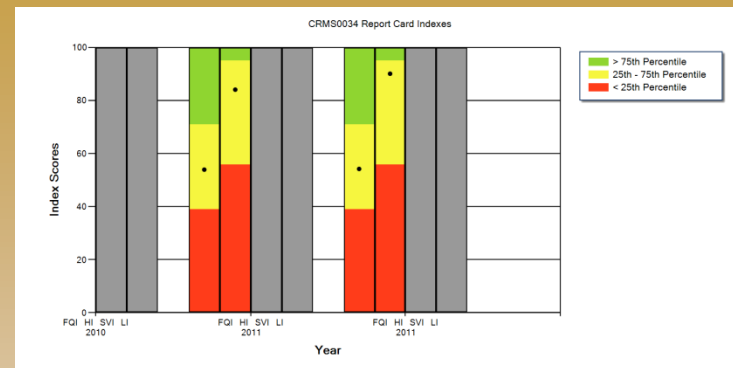
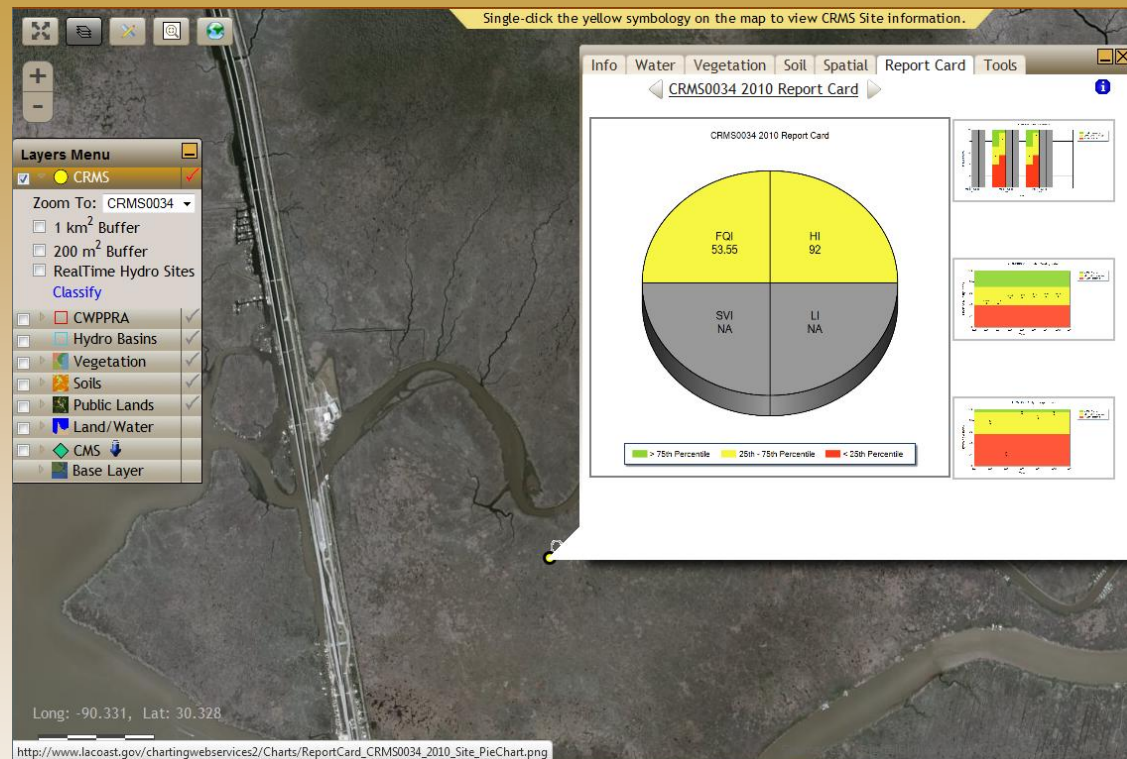


[Download Data](#)



# CRMS Viewer: CRMS Report Card Tab

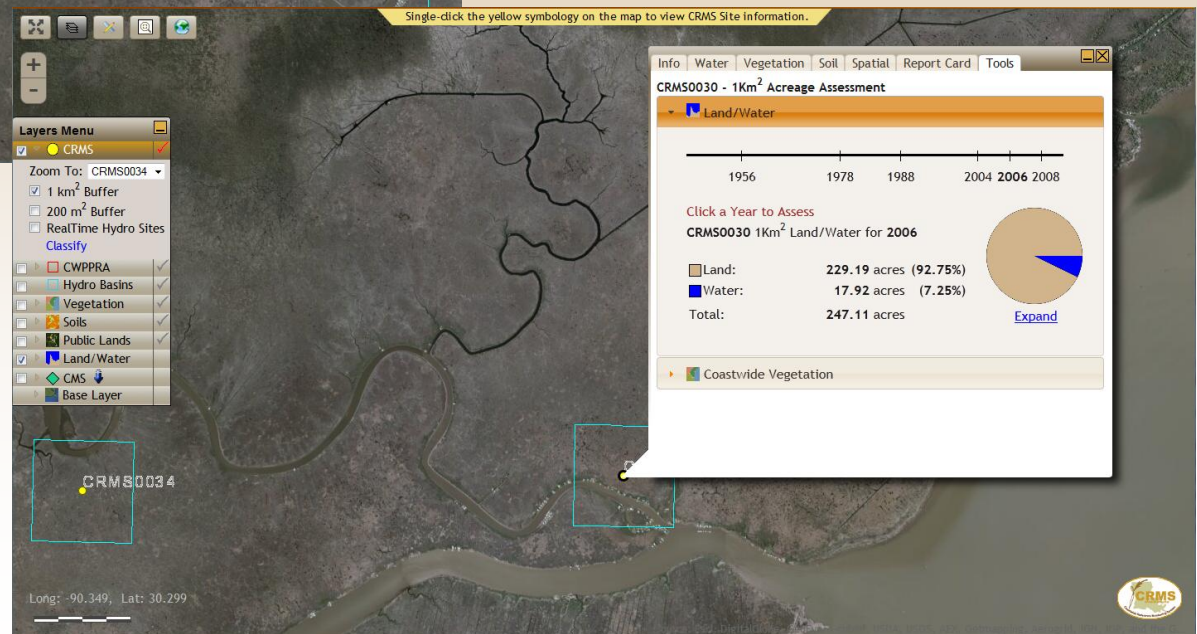
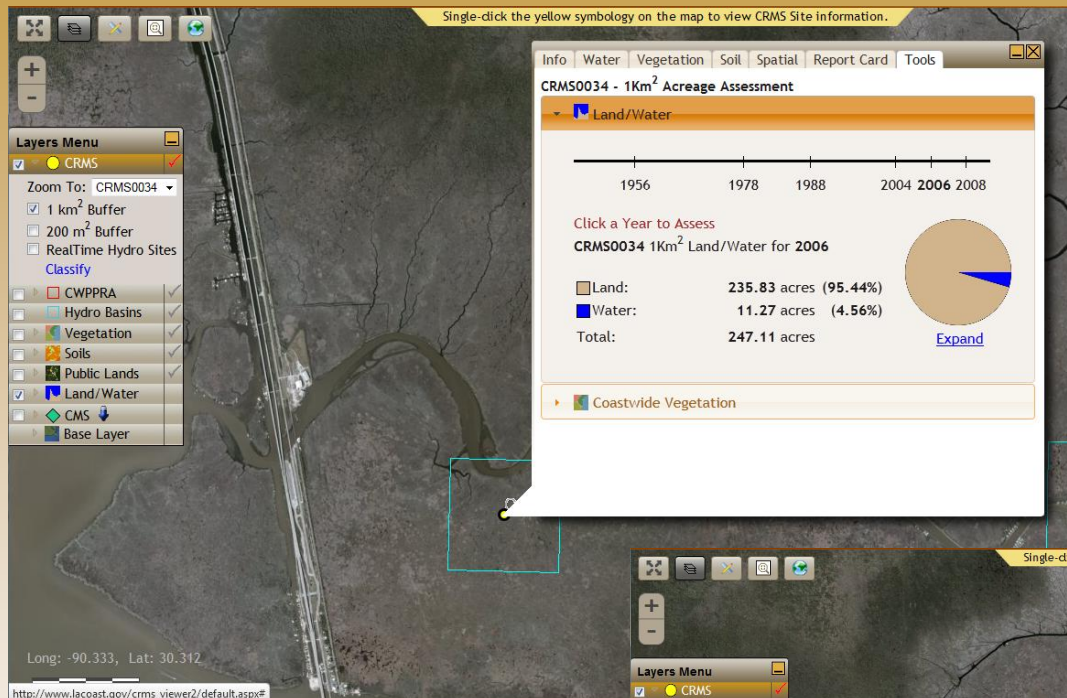
Single-click the yellow symbology on the map to view CRMS Site information.





# CRMS Viewer: CRMS Change Clicked Site

Tools: Changing selected site no longer changes bubble context



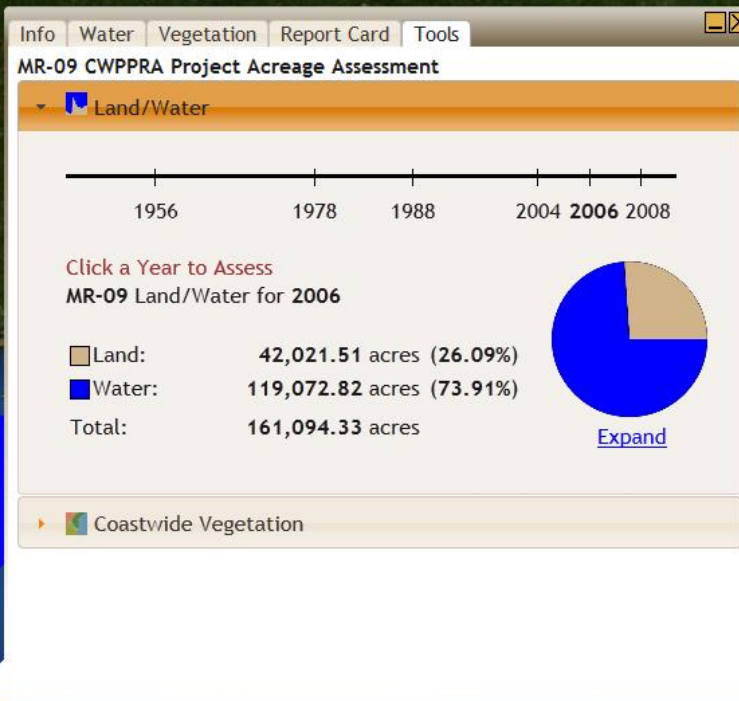
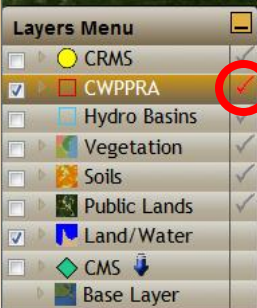




# CRMS Viewer: CWPPRA Layer (when active)



Single-click in a red polygon on the map to view CWPPRA Project information.



Long: -85.682, Lat: 30.557

0 15 30mi

Source: Esri, DigitalGlobe, GeoEye, 1-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the G...





Single-click in a blue polygon on the map to view Hydro Basin information.



**Layers Menu**

- ☐ CRMS
- ☐ CWPPRA
- ☒ Hydro Basins
- ☐ Vegetation
- ☐ Soils
- ☐ Public Lands
- ☒ Land/Water
- ☐ CMS
- ☐ Base Layer

Info Report Card Tools

### Mermentau Hydro Basin Acreage Assessment

Land/Water

1956 1978 1988 2004 2006 2008

Click a Year to Assess

**ME Land/Water for 2006**

Land:	484,837.90 acres (66.12%)
Water:	248,481.91 acres (33.88%)
Total:	733,319.81 acres

Coastwide Vegetation

Long: -92.527, Lat: 31.245

0 15 30mi

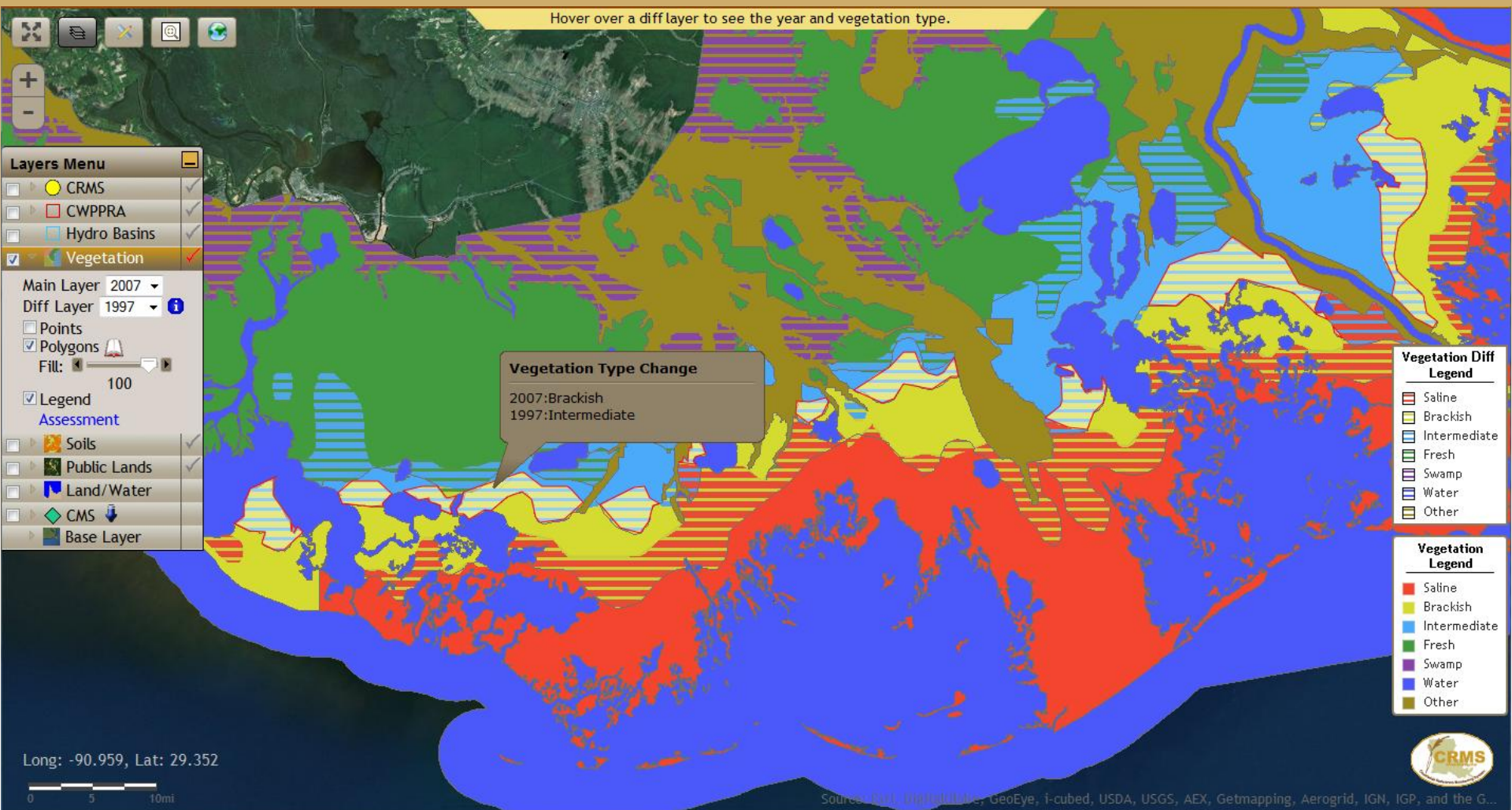
Source: Esri, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the G...







# CRMS Viewer: Veg Difference Improvement





# Staged: Numeric break down by basin

localhost:42000/Default.aspx

ference Monitoring System

a CWPPRA funded project



ata Mapping Library Visualization Program

Single-click the yellow symbology on the map to view CRMS Site information.

Range&Color / Basin Name	Atchafalya	Barataria	Breton Sound	Calcasieu/Sabin	Mermentau	Mississippi River	Pontchartrain	Terrebonne	Teche/Vermillion	Total
0 - 25	4	9	1	3	4	1	13	4	1	40
25 - 50	14	6	8	13	22	10	13	20	18	124
50 - 75	1	17	9	24	24	1	18	33	20	147
75 - 100	0	31	2	4	2	0	13	18	1	71
Unknown	1	2	0	2	1	1	1	0	0	8

Less Stats

## Tools Menu

Classify

Type:

Vegetation

Attribute:

FQI

Year:

2008

Change Colors/Intervals

Range: 0 to 100

Intervals: 4

Classify Clear

Assessment

Lat: 31.777







Allow user to customize the mapping environment, generate a link which can then be shared with others.

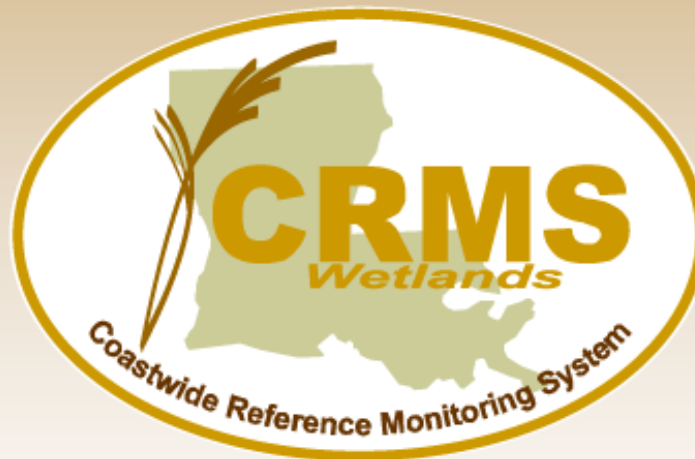




# **Questions / Comments**



# Louisiana's Coastwide Reference Monitoring System (CRMS) – *Wetlands*



**Agency Roadshows  
Feb/March 2013**

**Last year we presented the CRMS report card. This year we focused on fine tuning and developing new tools.**

- **Finalizing visualizations**
- **Refining indices**
- **Developing new metrics**
- **Considering new tools to evaluate projects**



# Floristic Quality Index

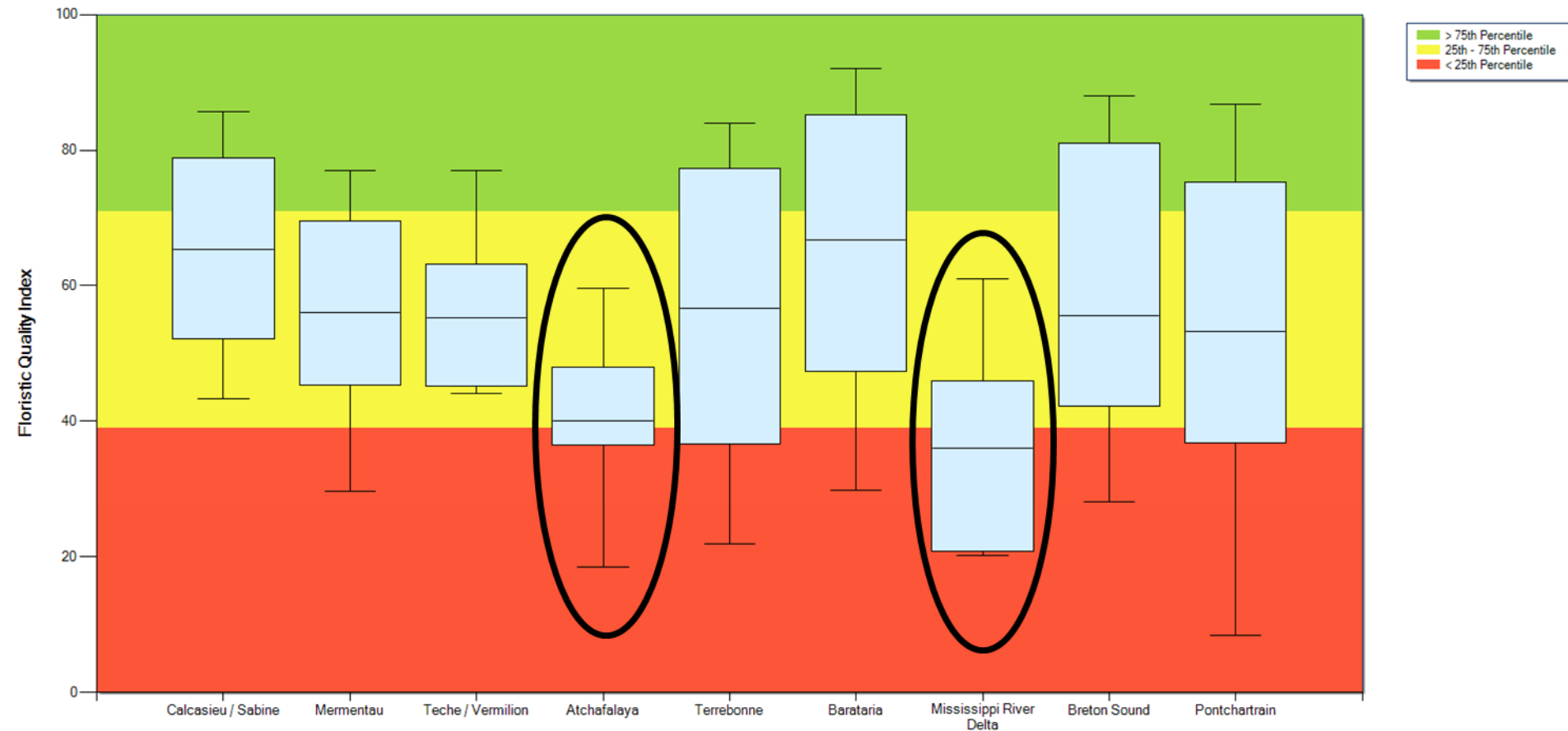
Index	Description
Floristic Quality Index (FQI)	Field collected species composition, percent cover, and the species' tolerance to disturbance and conservatism to a habitat are used to assess vegetation quality.

CC score	Description
0	Invasive plant species
1–3	Plants that are opportunistic users of disturbed sites
4–6	Plants that occur primarily in less vigorous coastal wetland communities
7–8	Plants that are common in vigorous coastal wetland communities
9–10	Plants that are dominants in vigorous coastal wetland communities

**Cretini, K.F., Visser, J.M., Krauss, K.W., and Steyer, G.D. (2011) CRMS vegetation analytical team framework-Methods for collection, development, and use of vegetation response variables. U.S. Geological Survey Open-File Report 2011–1097, 60 p.**

**Cretini, K.F., Visser, J.M., Krauss, K.W., and Steyer, G.D. (2012). Development and use of floristic quality index for coastal Louisiana marshes. Environmental Monitoring and Assessment 184:2389-2403.**

Basin 2010





# Additional Vegetation Metrics

## **EXAMPLE PROJECT GOALS:**

**Evaluate the condition of the established emergent and planted vegetation on the terraces.**

**Maintain or increase the abundance of plant species typical of a freshwater and intermediate marsh.**

**Promote the re-establishment of emergent marsh.**

**Establish emergent wetland vegetation in shallow open water areas.**

**Maintain existing intermediate and brackish vegetation communities.**

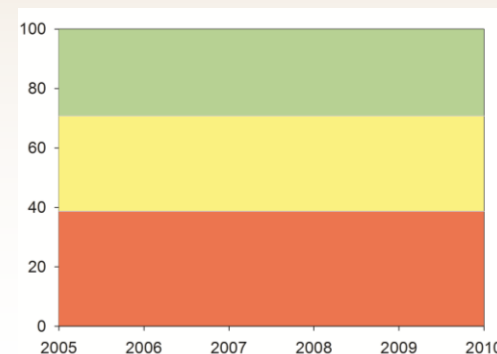
**Vegetation Volume Index  
&  
Vegetation Community Salinity**

## WORK IN PROGRESS:

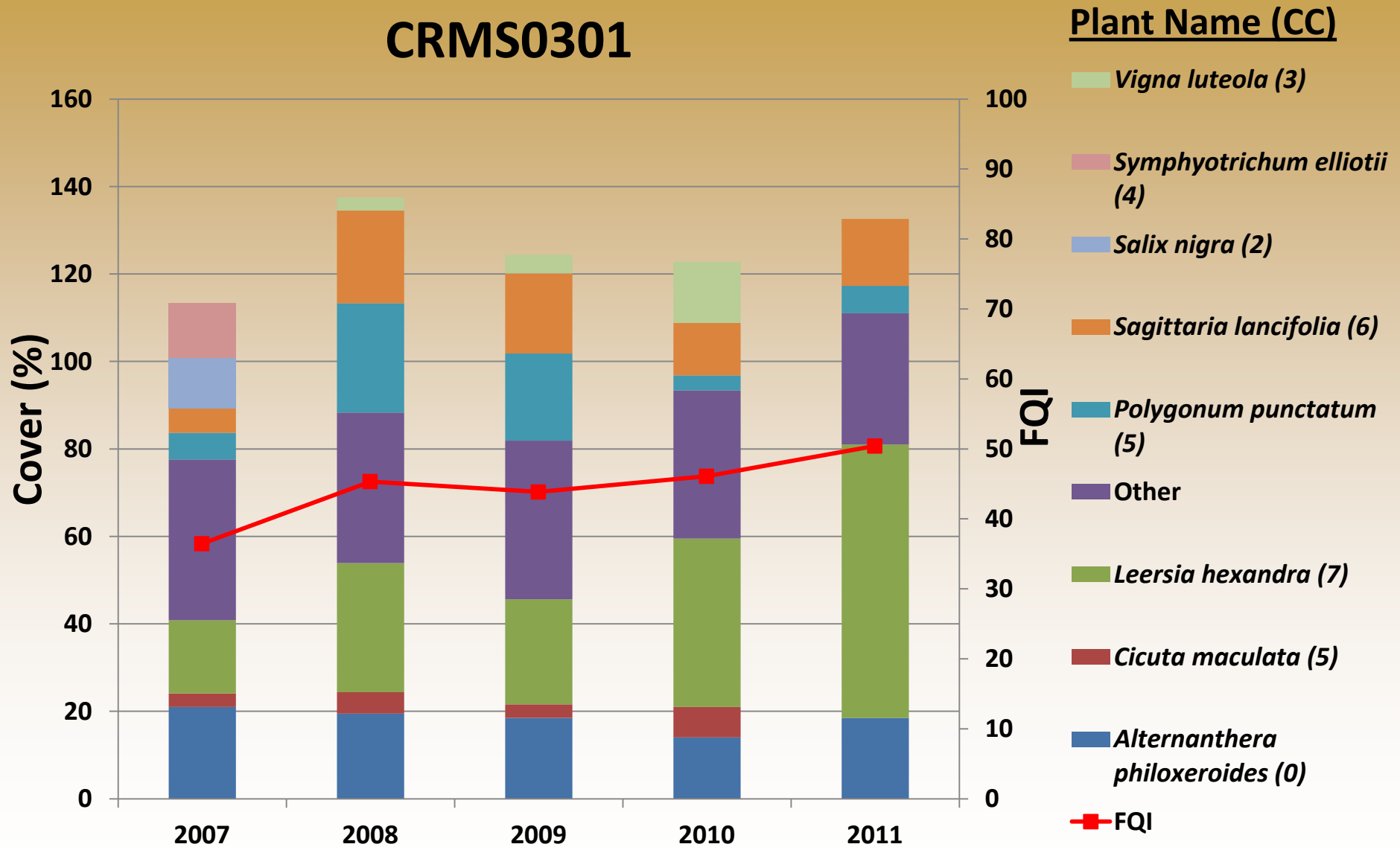
- Quantifies the **AMOUNT** of vegetation, without consideration of vegetation type or quality
- Sum of the volume of individual vegetation layers (herbaceous, shrub, trees, carpet)

$$\text{Vegetation Volume (m}^3\text{)} = [ (\text{herb layer area (m}^2\text{)} * \text{herb height (m)}) + (\text{shrub layer area (m}^2\text{)} * \text{shrub height (m)}) + (\text{tree layer area (m}^2\text{)} * \text{tree height (m)}) + (\text{carpet layer area (m}^2\text{)} * \text{carpet height (m)}) ]$$

- All volumes in a particular marsh type are assigned a rank in a normalize distribution. This “rank” is the VVI score (0-100).
- Index scoring would be the same as HI & FQI  
>75% would be green and <25% would be red



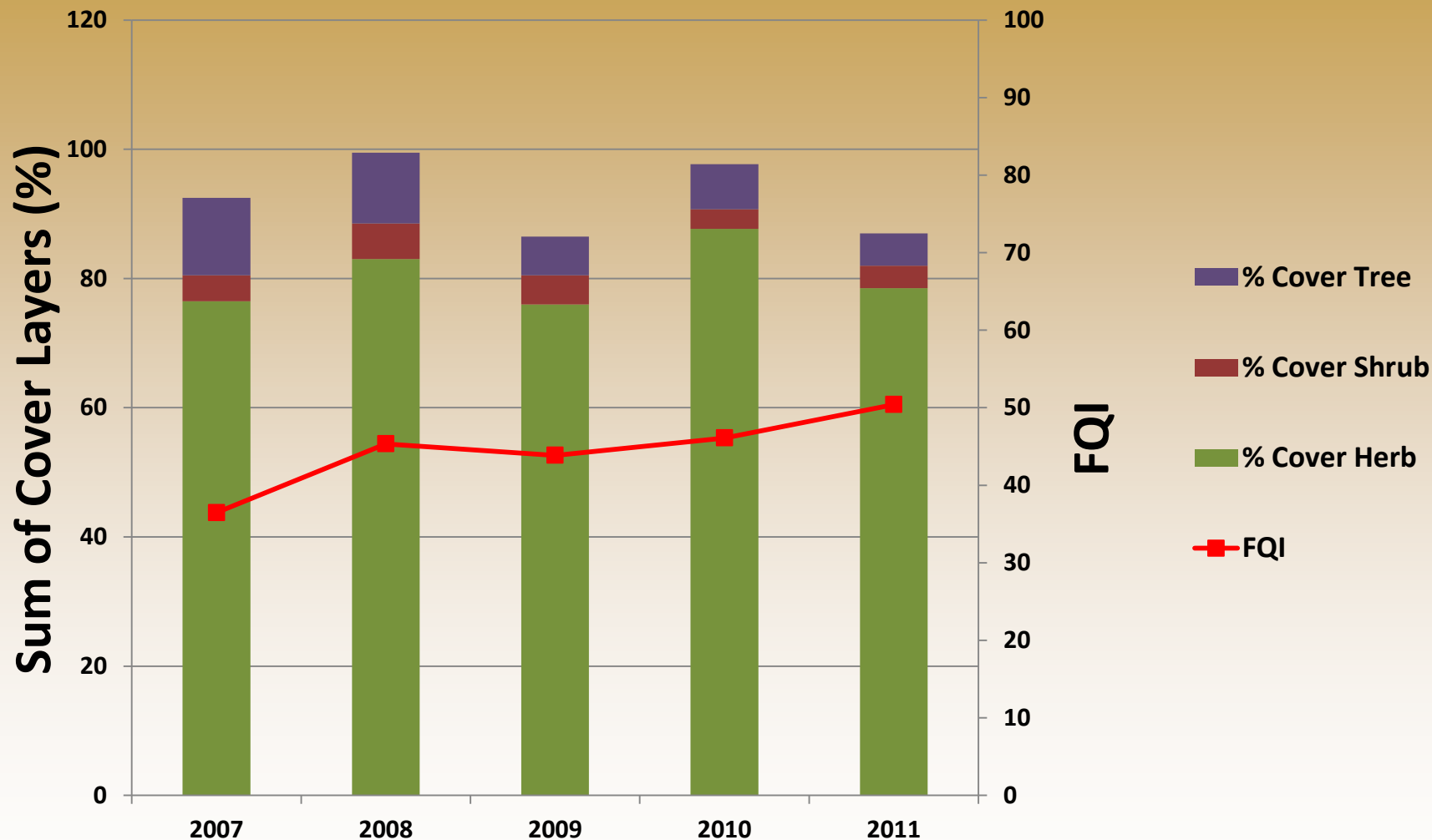
## CRMS0301





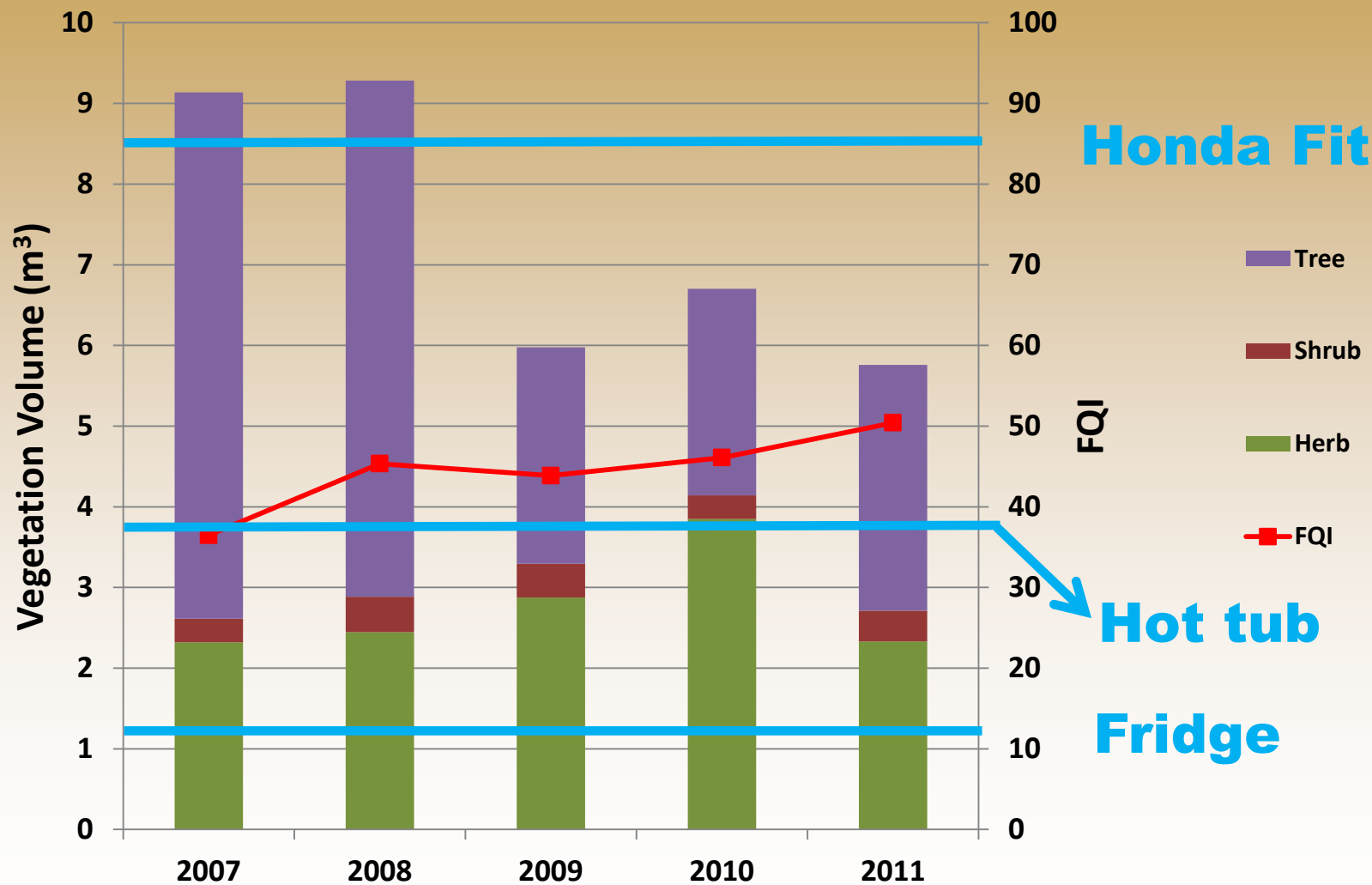
# Vegetation Cover by Layer

CRMS0301

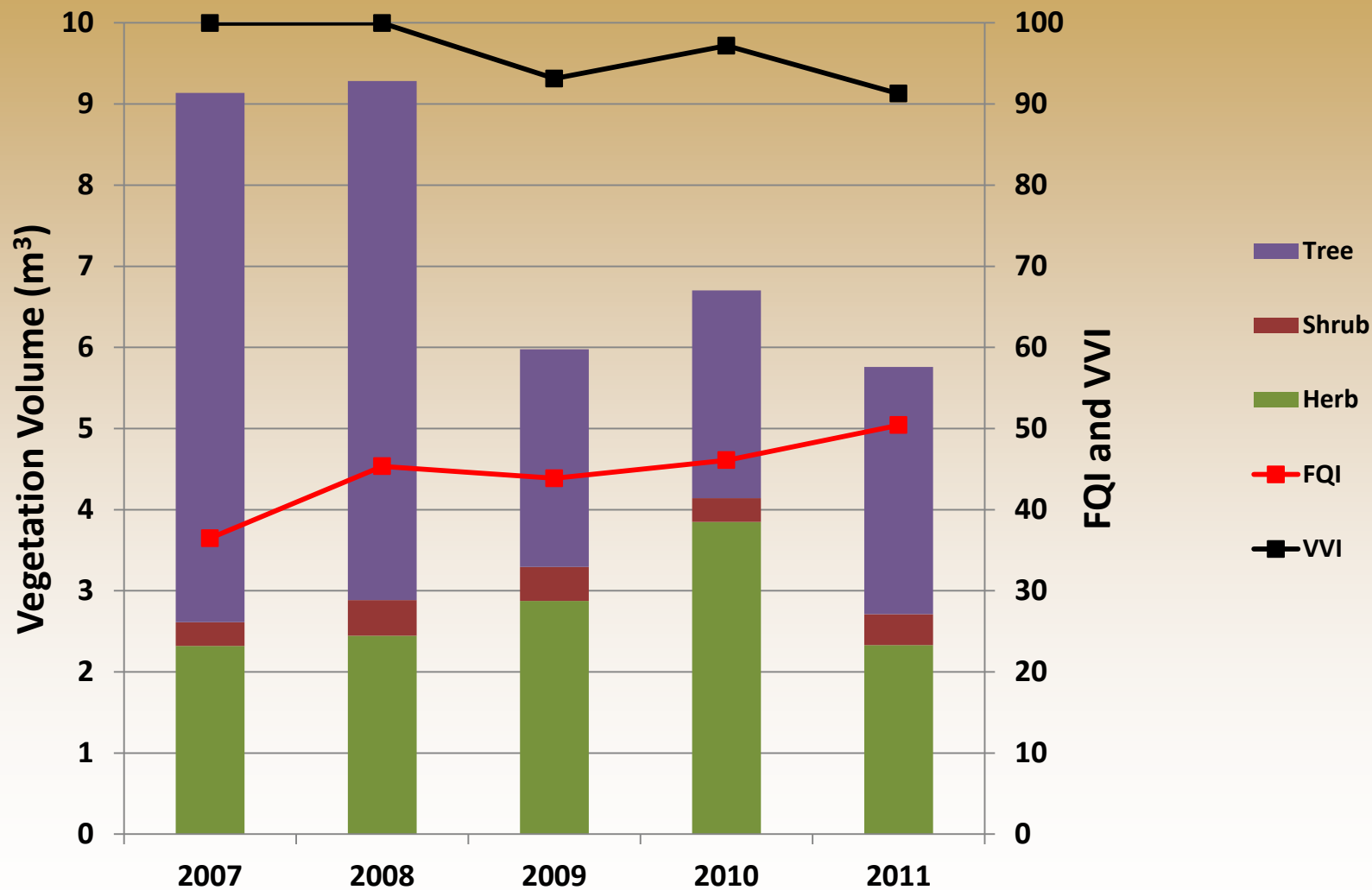


**Layer cover \* layer height**

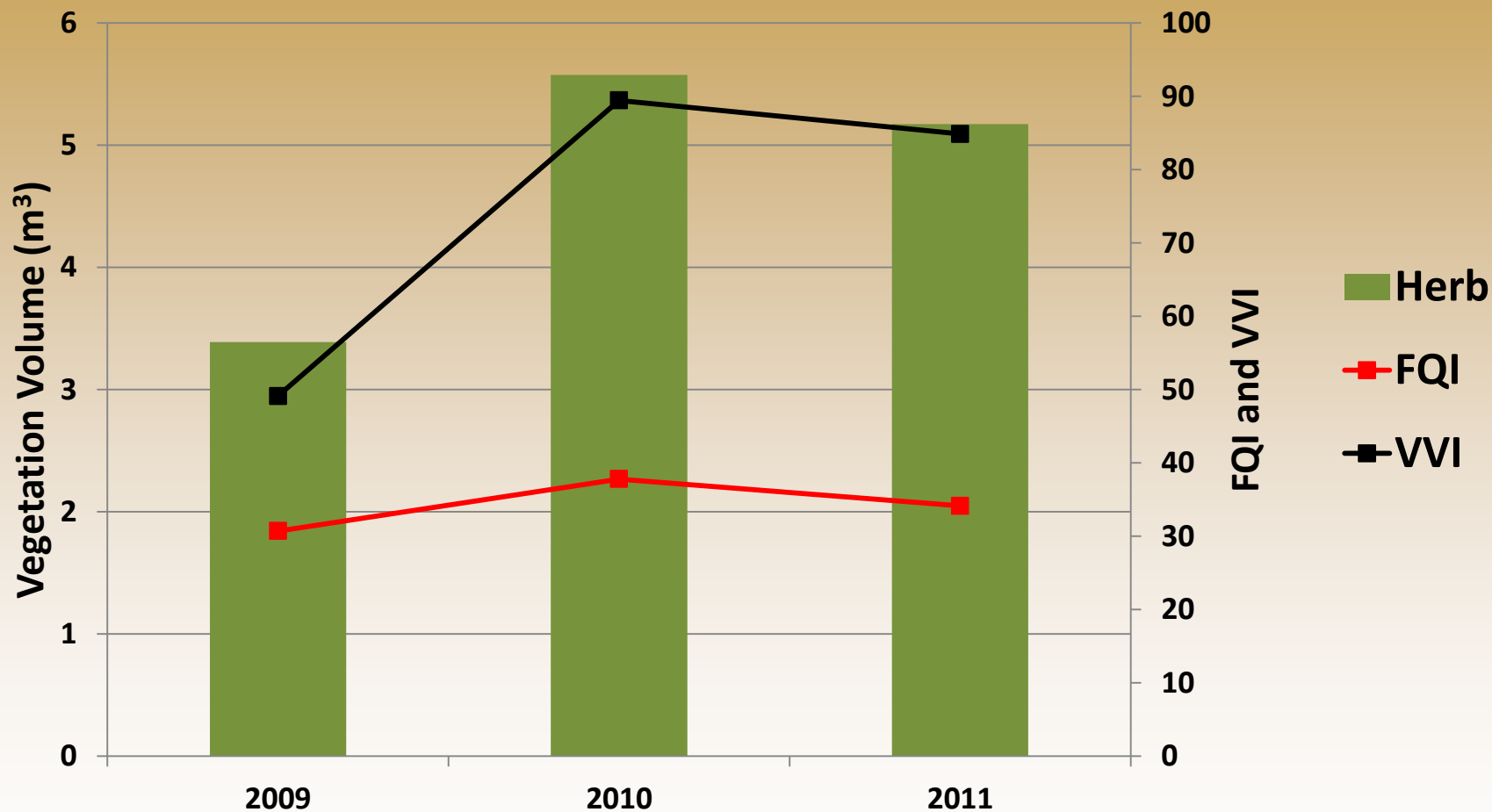
CRMS0301



CRMS0301



## CRMS6304



# Vegetation Volume Index



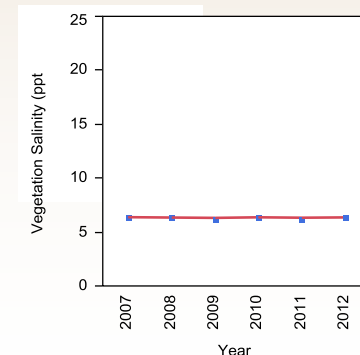
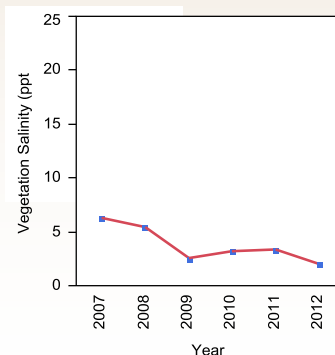
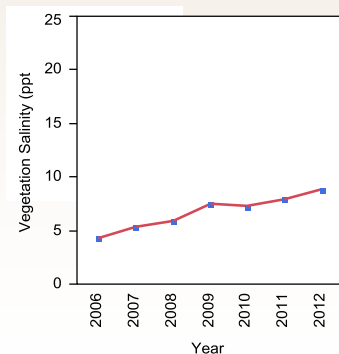


# **Vegetation Community Salinity**

# Vegetation Community Salinity

## WORK IN PROGRESS:

- **Species specific salinity values were calculated as the weighted average of species cover and median growing season salinity for all observations coastwide.**
- **Then VCS was calculated using the weighted average of cover and species salinity by site per year.**
- **VCS can be plotted at the site (project or unit) level to visualize trends in how vegetation responds to shifts in salinity.**
- **Could provide additional information for the vegetation tab but wouldn't be scaled from 0 to 100 and incorporated into the report card.**
- **Using the robust dataset we could refine the salinity ranges that define the major vegetation classifications.**

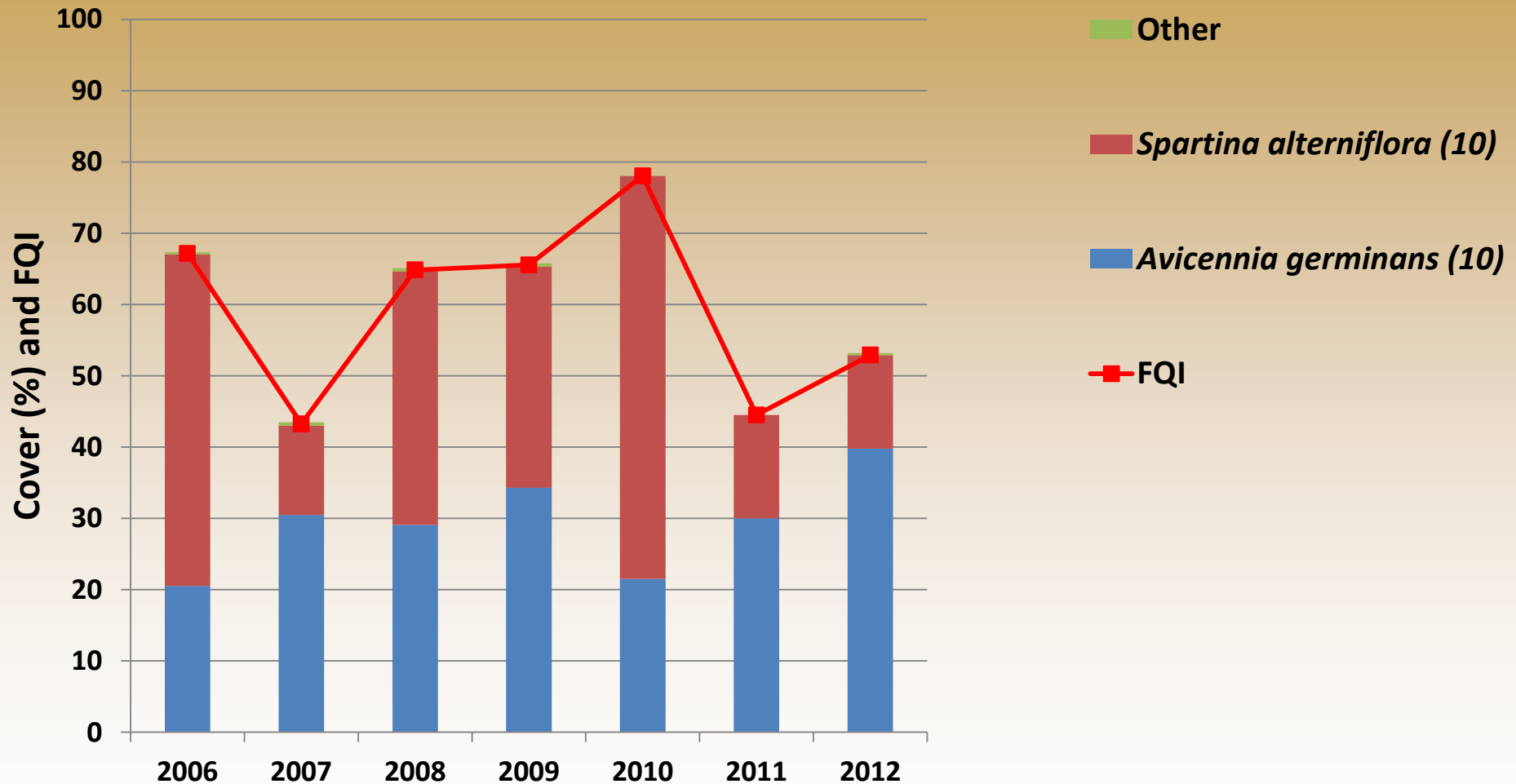




# Vegetation Community Salinity

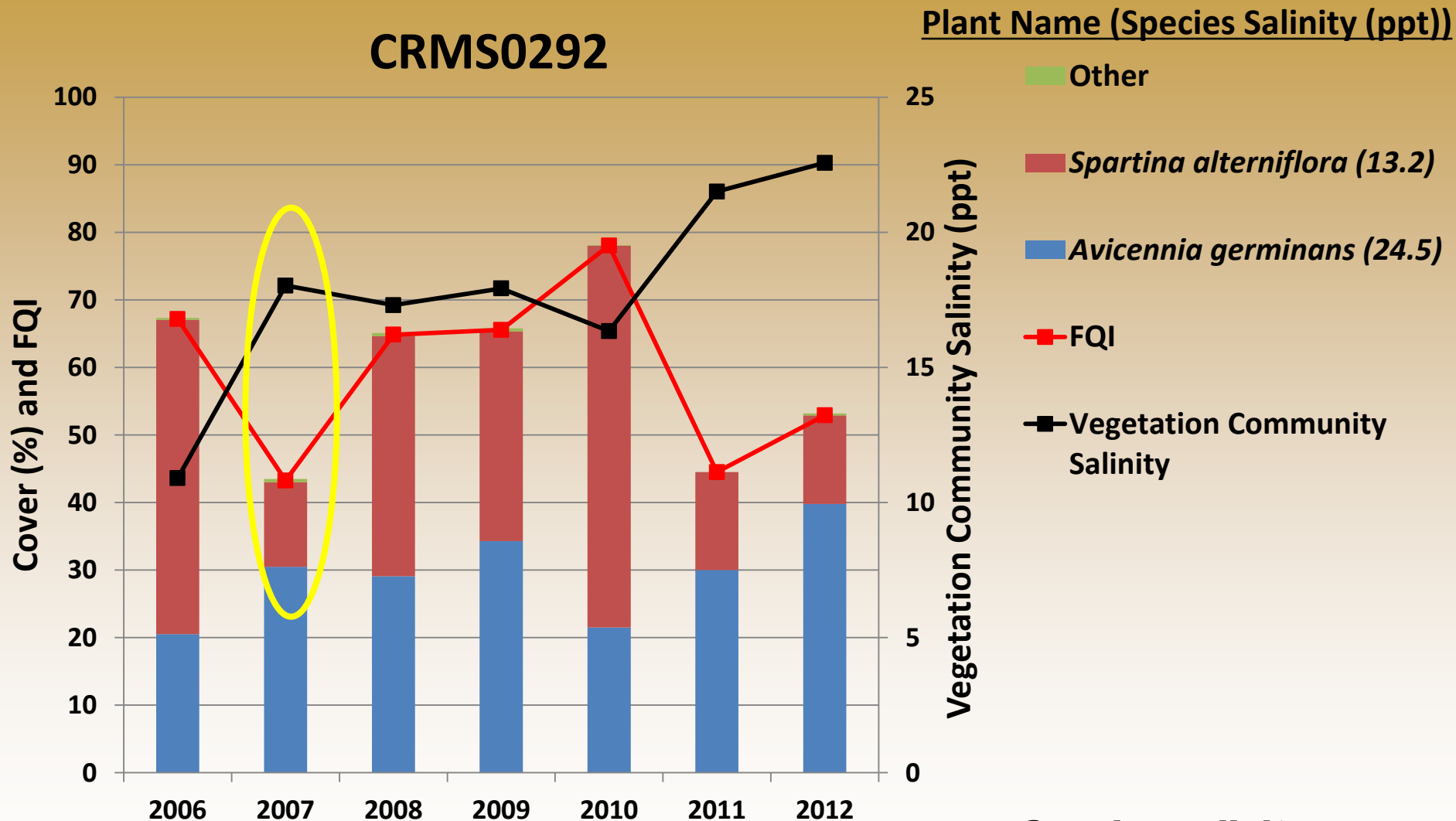
CRMS0292

Plant Name (CC)



# Vegetation Community Salinity

CRMS0292



**Species salinity:**  
**Mangrove = 24.5**  
***Spartina alt.* = 13.2**

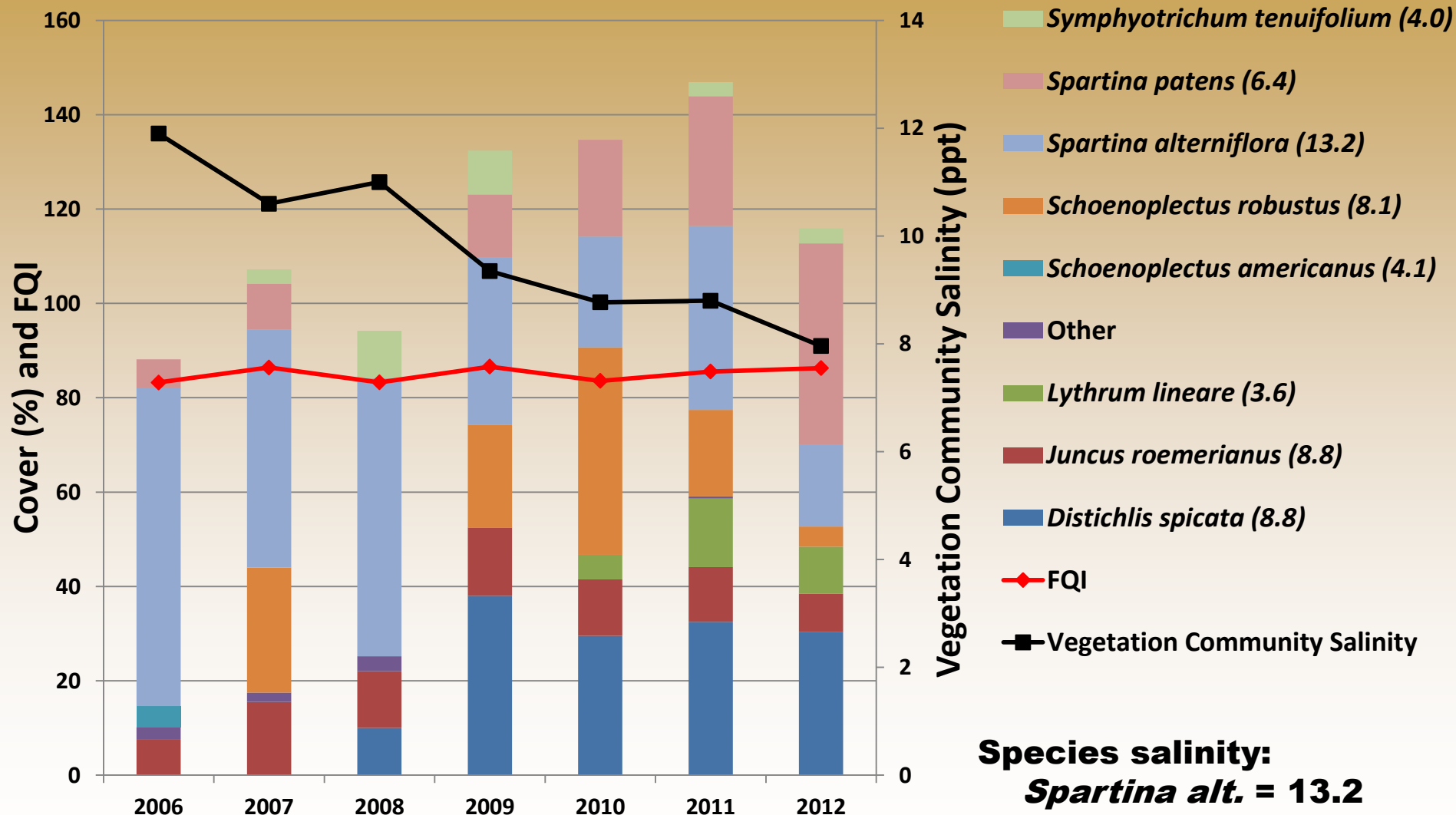




# Vegetation Community Salinity

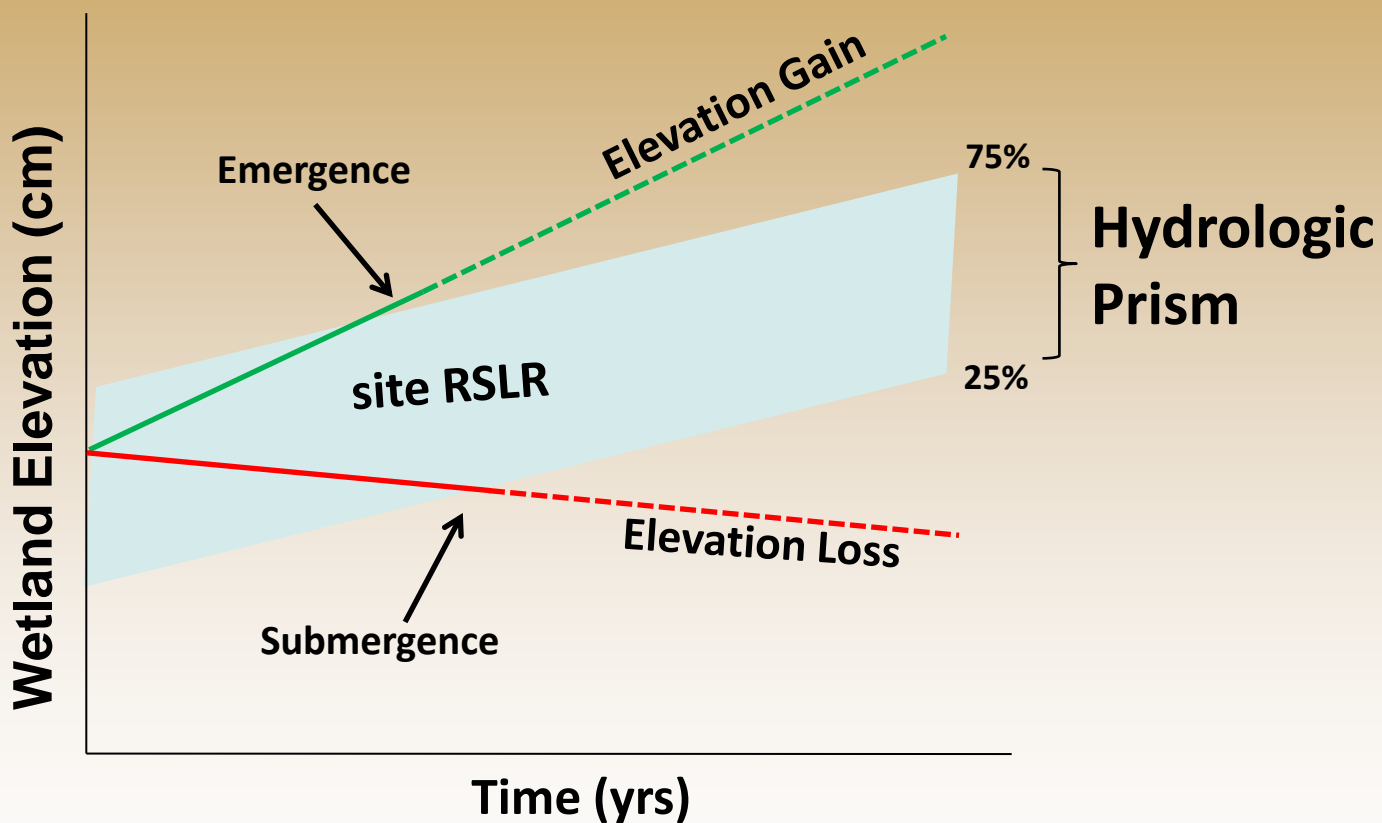
CRMS0119

Plant Name (Species Salinity (ppt))

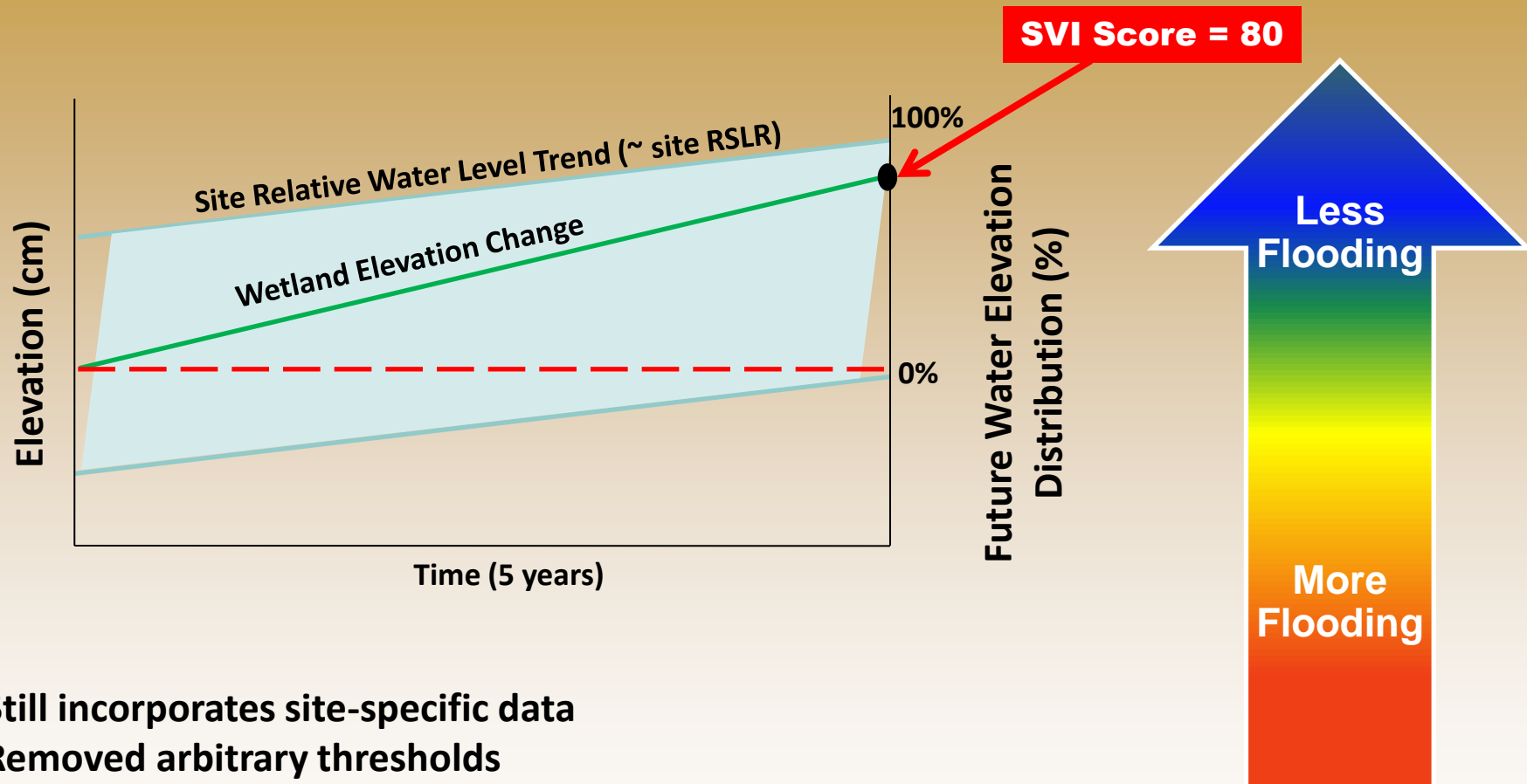


# **Revision to the SVI**

# Initial Submergence Vulnerability Index



# Revised Submergence Vulnerability Index



- Still incorporates site-specific data
- Removed arbitrary thresholds
- Decreased projection time to 5 years
- Redefined site-RSLR as:

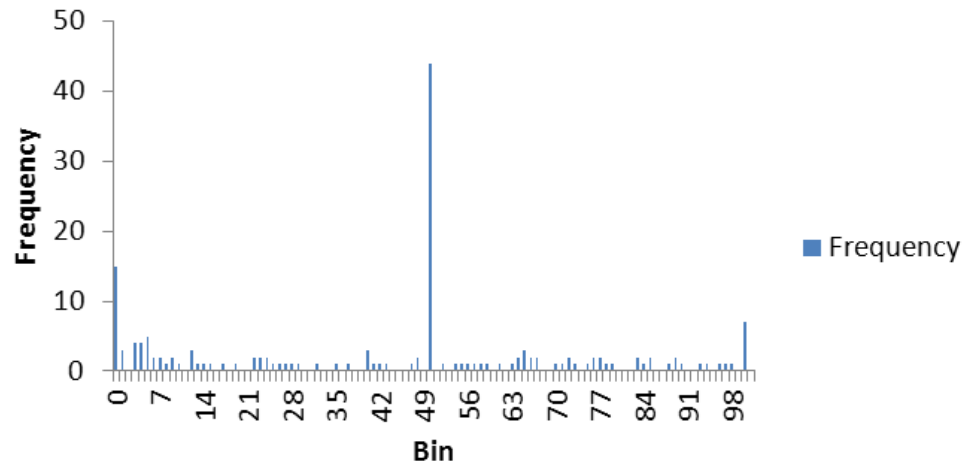
Site Relative Water Level Trend = Shallow Subsidence (accretion-elevation change)+ESLR

- Higher scores are flooded less and less vulnerable to submergence

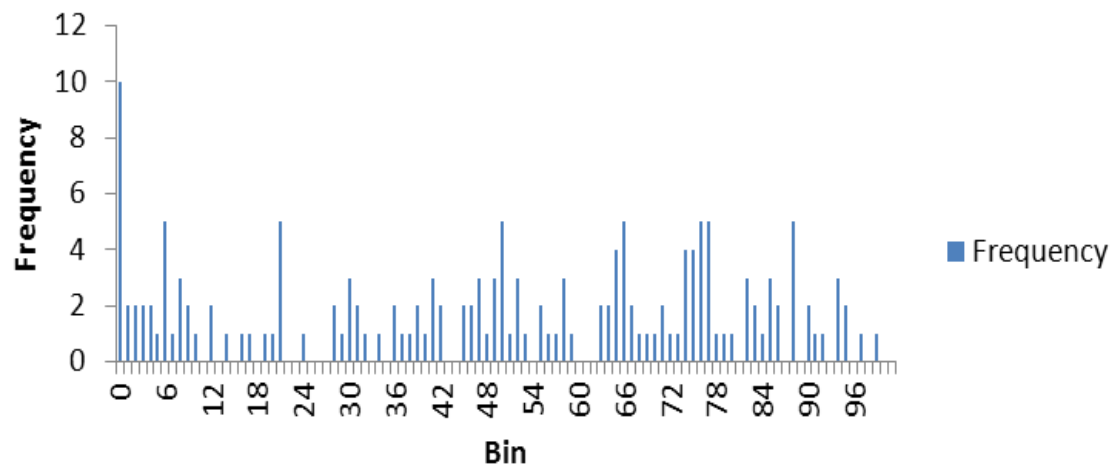


# Revised SVI – Score Distributions

## Initial SVI Scores



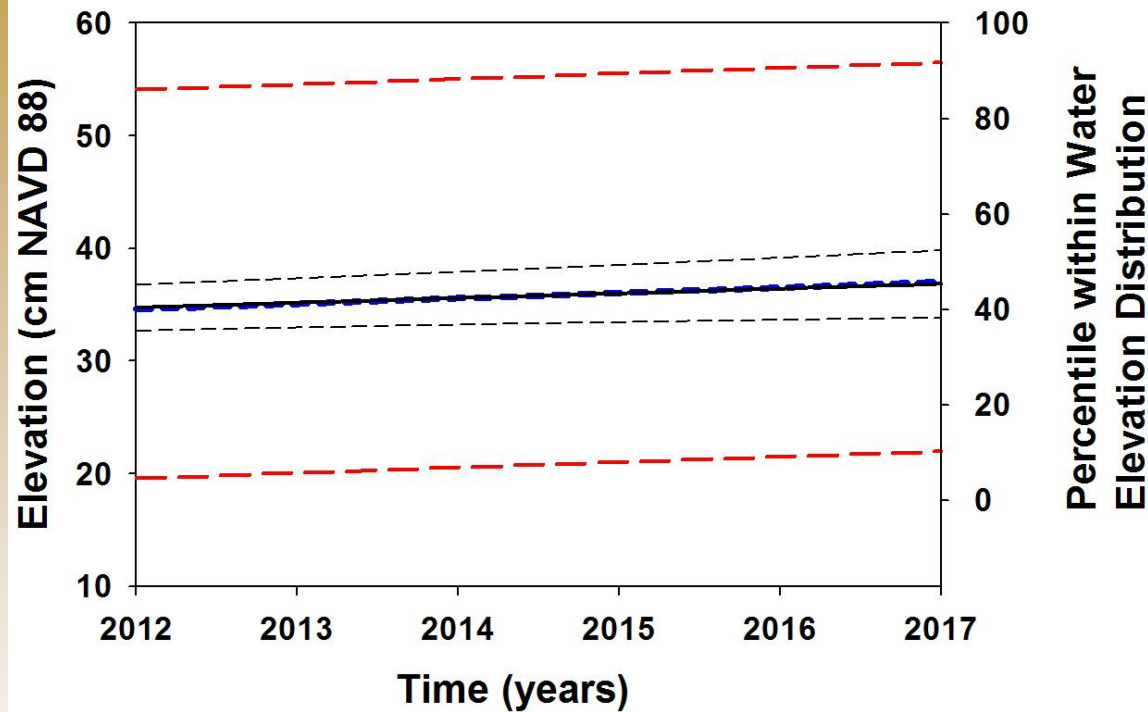
## Revised SVI Scores





# Revised SVI – Site Scale

CRMSxxxx  
SVI Score = 52.7



- 90% Hydrological Datum
- 10% Hydrological Datum
- Mean Water Level
- Wetland Elevation Change (cm y<sup>-1</sup>)
- 95% Prediction Band

Wetland Elevation Change = 0.42 cm y<sup>-1</sup>

Accretion = 0.59 cm y<sup>-1</sup>

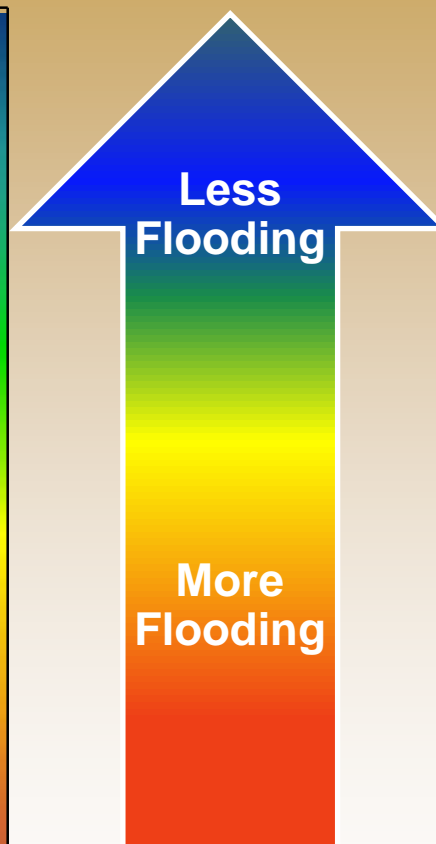
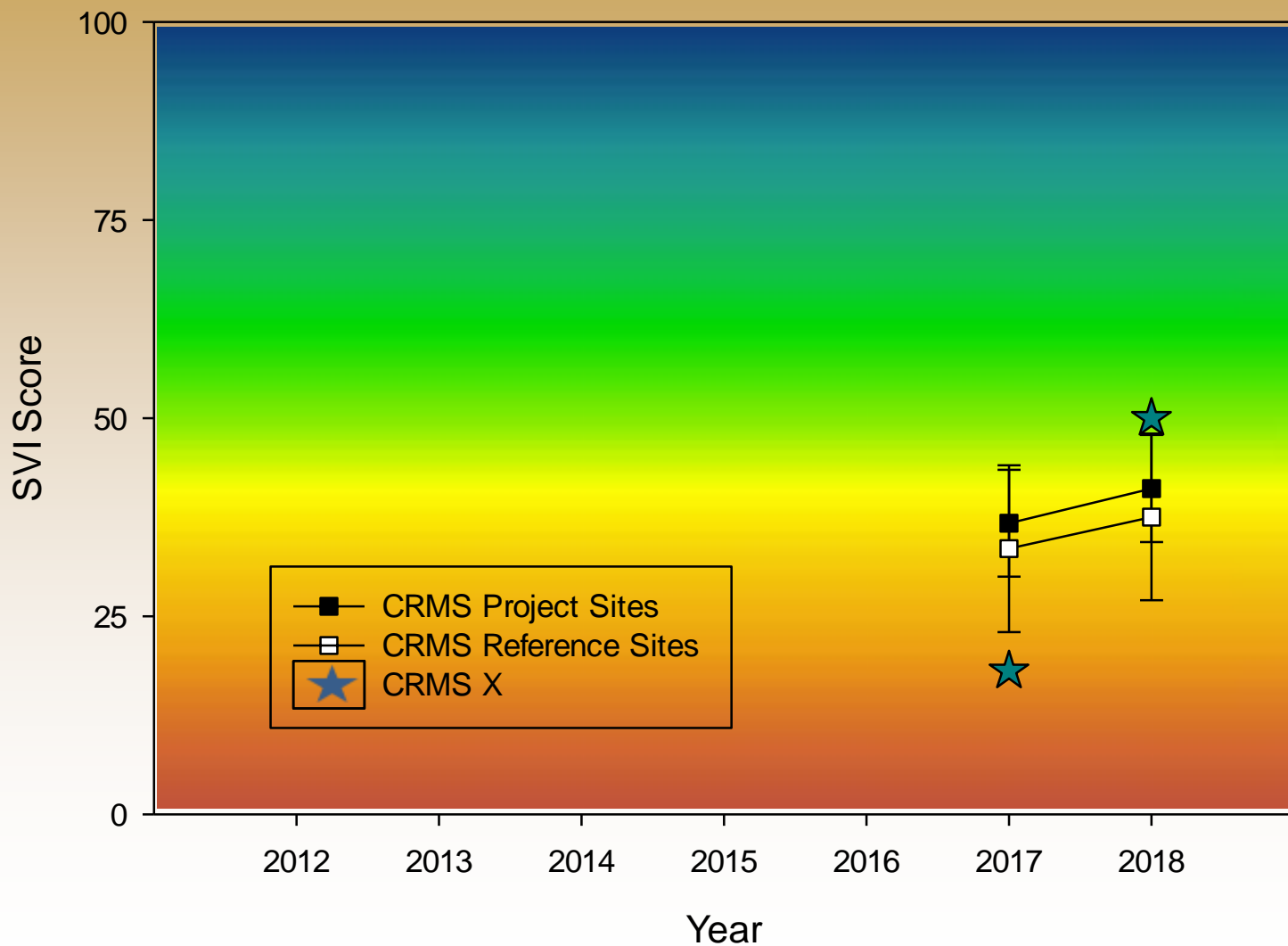
Shallow Subsidence = 0.17 cm y<sup>-1</sup>

ESLR = 0.31 cm y<sup>-1</sup>

Site Relative Water Level Trend = 0.48 cm y<sup>-1</sup>

SVI Score = 52.7

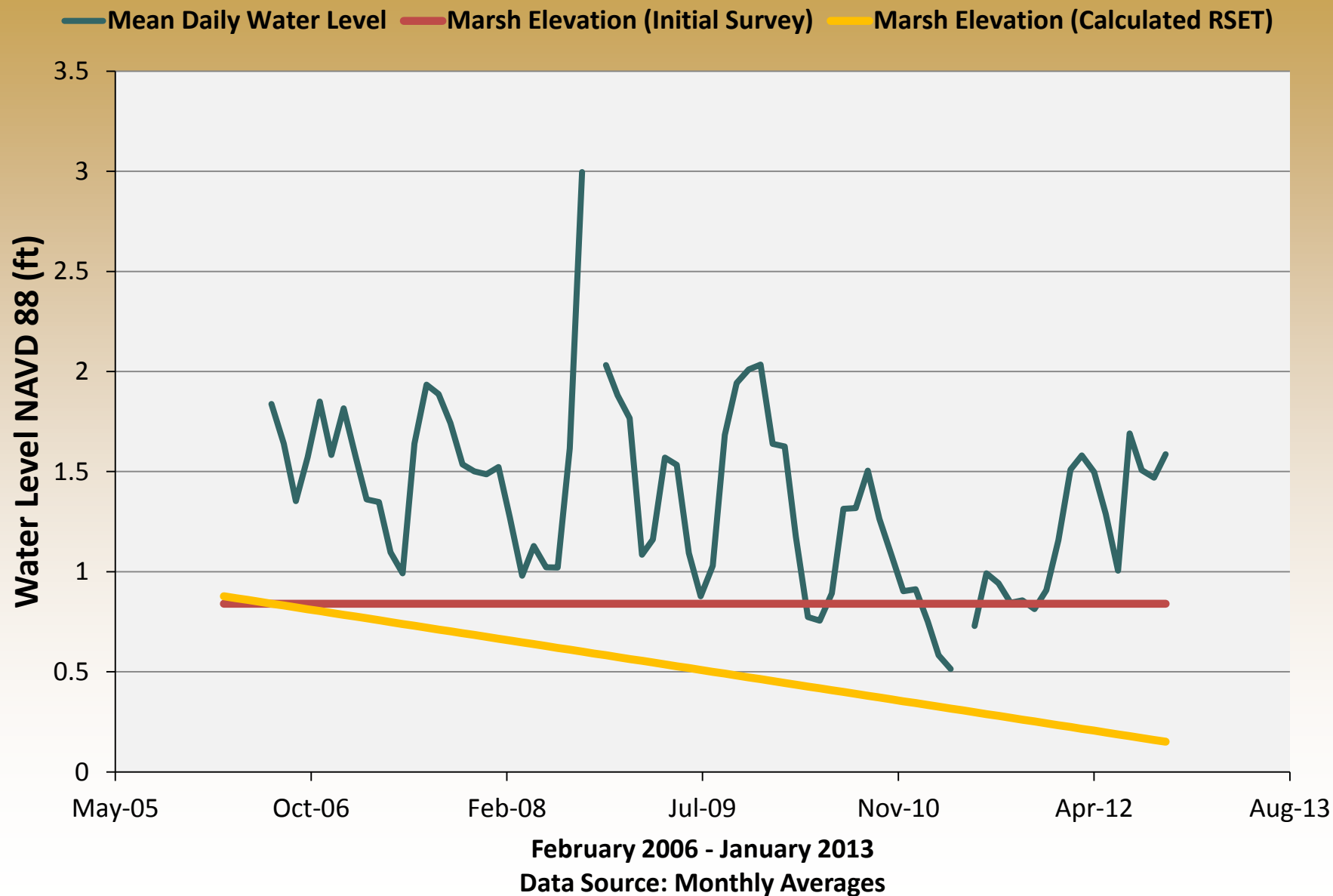
CRMS X: 2012-2018





# Calculated Marsh Elevation

## CRMS0694 - Continuous Hydrographic Data





# CRMS Analytical Future Direction

**The analytical teams will meet with the MWG to present recommendations for additional metrics and future data manipulations.**

**The report card continues to be a work in progress and the indices will be refined as the datasets become more robust, new information becomes available, or needs change.**

**Analytical teams are working to present tools and products that best suit the CWWPRA community.**

**With the completion of the Master Plan, the Landscape Team will be evaluating options for a landscape index.**



# Questions??

**As always your feedback, suggestions,  
and comments are what help move the  
development of the website and analytical  
teams forward.**

**[piazzas@usgs.gov](mailto:piazzas@usgs.gov)**

